

HOMELITE

RE-8E

RE-8E, 8 H.P., SHUTTLE, ELECTRIC, W/30" MOWER, MFG. NO. 1690059
TRACTOR, 8 H.P., SHUTTLE MFG. NO. 1690058
Rotary Mower, 30-Inch, Mfg. No. 1651030
Grass Catcher, Rear Mounted, Mfg. No. 1600383
Counterweight, Mfg. No. 1600351

OPERATOR'S MANUAL

SAFETY PRECAUTIONS TO PROTECT YOURSELF AND OTHERS

IMPORTANT

OPERATION

Know the controls and how to stop quickly. **READ THE OPERATOR'S MANUAL.**

Do not allow children to operate vehicle. Do not allow adults to operate it without proper instruction.

Do not carry passengers. **KEEP CHILDREN AND PETS A SAFE DISTANCE AWAY.**

Clear work area of objects which might be picked up and thrown.

Take all possible precautions when leaving vehicle unattended; such as disengaging power-take-off, lowering attachments, shifting into neutral, setting parking brake, stopping engine and removing key.

Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of steep slopes; never across the face.

Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.

Stay alert for holes in terrain and other hidden hazards.

Use care when pulling loads or using heavy equipment.

- A. Use only approved drawbar hitch points.
- B. Limit loads to those you can safely control.
- C. Do not turn sharply. Use care when backing.
- D. Use counterweight (s) or wheel weights when suggested in operator's manual.

Watch for traffic when crossing or near roadways.

Keep all nuts, bolts, and screws tight to be sure equipment is in safe working condition.

Do not change engine governor settings or overspeed engine.

Do not operate equipment when barefoot or wearing open sandals. Always wear substantial footwear.

FUEL AND FIRE HAZARDS

Handle gasoline with care -- it is highly flammable.

- A. Use approved gasoline container.
- B. Never remove cap or add gasoline to a running or hot engine or fill fuel tank indoors. Wipe up spilled gasoline.
- C. Open doors if engine is run in garage -- exhaust fumes are dangerous. Do not run engine indoors.

Never store equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark.

Allow engine to cool before storing in any enclosure.

To reduce fire hazard keep engine free of grass, leaves or excessive grease.

ATTACHMENTS

Disengage power to attachments and stop engine before leaving operator position.

Disengage power to attachment (s) and stop engine before making any repairs or adjustments.

Disengage power to attachments when transporting or not in use.

When using any attachments never direct discharge of material toward bystanders or allow anyone near vehicle while in operation.

Keep vehicle and attachments in good operating condition and keep safety devices in place. Use guards as instructed in operator's manual.

Vehicle and attachments should be stopped and inspected for damage after striking a foreign object and the damage should be repaired before restarting and operating the equipment.

When using vehicle with mower:

- (1) Mow only in daylight or in good artificial light.
- (2) Never make a cutting height adjustment while engine is running if operator must dismount to do so.
- (3) Shut engine off when removing grass catcher and/or unclogging chutes.
- (4) Check blade mounting bolts for proper tightness at frequent intervals.

Check grass catcher bags frequently for wear or deterioration. Replace with new bags for safety protection.

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WARRANTY

We warrant this HOMELITE product to be free from defects in material or workmanship under normal use and service, except that we make no warranty, express or implied, with respect to tires, engines, generators or voltage regulators (which usually are warranted by their respective manufacturers) nor with respect to any unit which after sale by HOMELITE has been altered in any way without HOMELITE'S express consent. Our obligation under this warranty is limited to replacing, without charge any part which is proven defective within one year (30 days if the unit is used for commercial, rental or municipal purposes) from date of purchase, if returned to us, with transportation charges prepaid, at a HOMELITE branch office or to a dealer whom we have authorized to make the replacement.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, PERFORMANCE OR OTHERWISE AND IN NO EVENT SHALL HOMELITE BE LIABLE FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES.

HOMELITE
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ASSEMBLING

The riding mower is shipped with mower attached to tractor. Remove all shipping materials. The following preparation is required:

1. Place steering wheel on steering shaft and secure with bolt and nut.

NOTE

If rear mounted grass catcher is to be used with riding mower avoid step number two (below). Deflector will not be used with adapter.

2. Secure mower deflector to mower housing with bolts, flat washers, lockwashers and nuts.
3. Using mower lift lever, raise mower.
4. Remove battery from mounting bracket. Fill each cell with standard battery electrolyte to the level marks shown on case. Charge battery until specific gravity of electrolyte is 1.260.

CAUTION

Use only a 12 volt charger at less than 1.5 ampere charging rate. Any higher charging rate will damage battery.

Place battery back on the mounting bracket with the terminals toward the center of tractor and secure in place with rubber clamp.

ACCESSORIES

COUNTERWEIGHT

1. A front counterweight is recommended when using a rear mounted grass catcher on slopes of 15-30%. Mowing slopes greater than 30% is not recommended.
2. See Figure A. Attach counterweight assembly (1) with two carriage bolts (2), lockwashers (3), and hex nuts (4). Holes for weight are stamped in frame and are located under rubber foot pads. After weight is installed, replace rubber foot pads over the counterweight assembly.

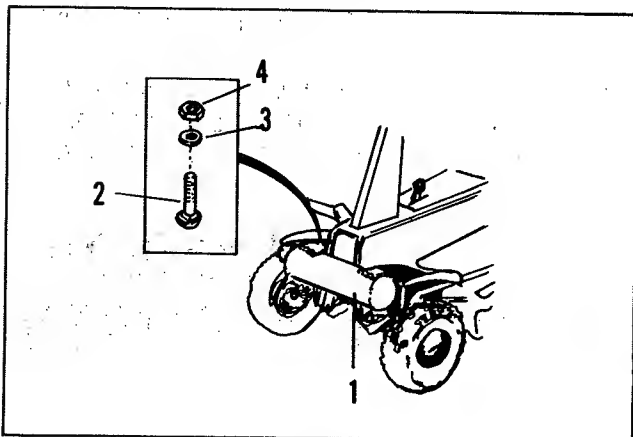


Figure A

REAR MOUNTED GRASS CATCHER

If a rear mounted grass catcher is used, assemble and attach it to vehicle as follows:

1. See Figure 1. Remove two 3/4-inch long carriage bolts, flat washers, lockwashers, and nuts attaching deflector to housing. Remove deflector from housing. Secure adapter to housing with two 1-inch long carriage bolts (installed from inside of adapter) and wing nut assemblies. Be sure to replace discharge deflector, using wing nuts, whenever adapter is removed.
2. See Figure 2. Attach mower lift plates (bevel to inside of housing) to mower blade with four capscrews and locknuts.

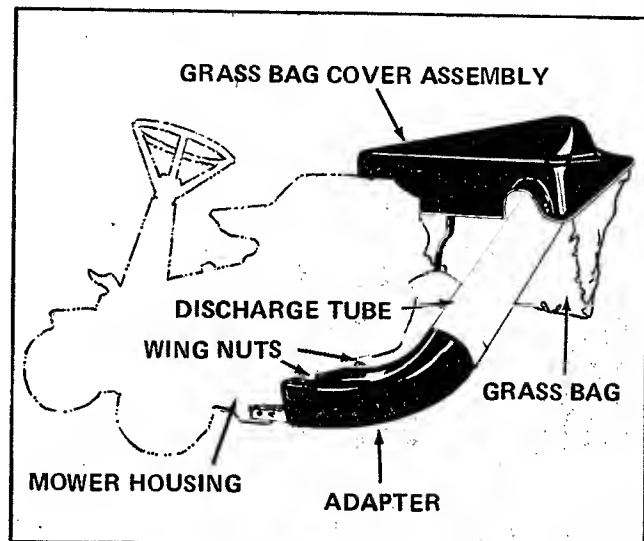


Figure 1.

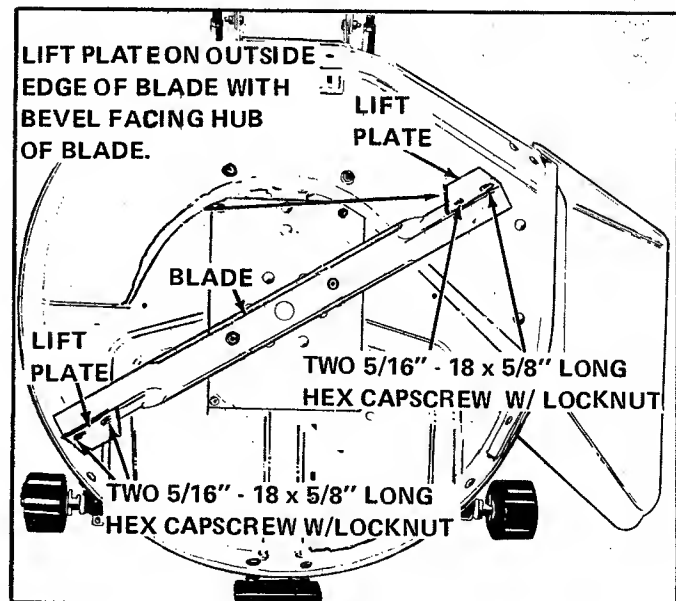


Figure 2.

3. See Figure 3. Attach two vertical supports to rear of unit. Holes are pre-stamped in tractor frame. Use two curved head bolts, lockwashers, and nuts to fasten each vertical support to unit.

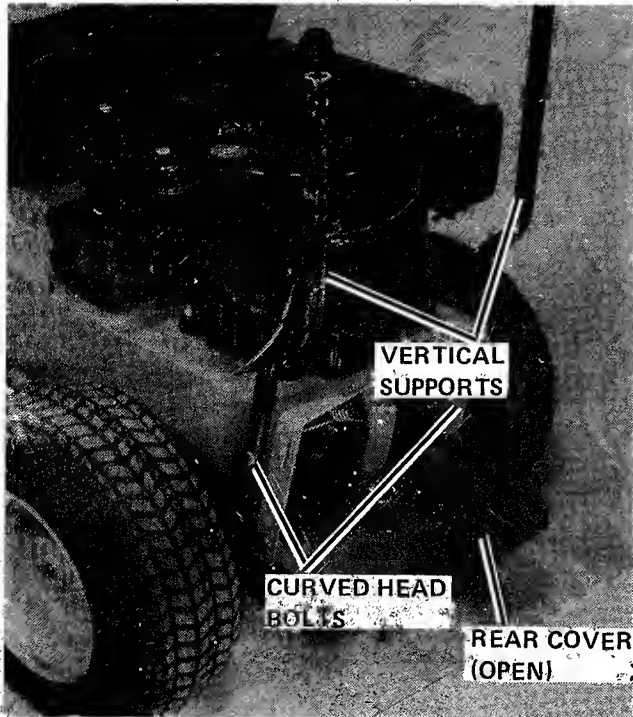


Figure 3.

4. See Figure 4. The discharge tube is shipped as a flat plastic sheet. Roll it into a tube and hold in shape with phillips-head screws. Install screws from inside with a flat washer under head of screw. Place another flat washer on outside of tube followed by a lockwasher and nut. Install discharge tube on end of adapter as shown in Figure 1.

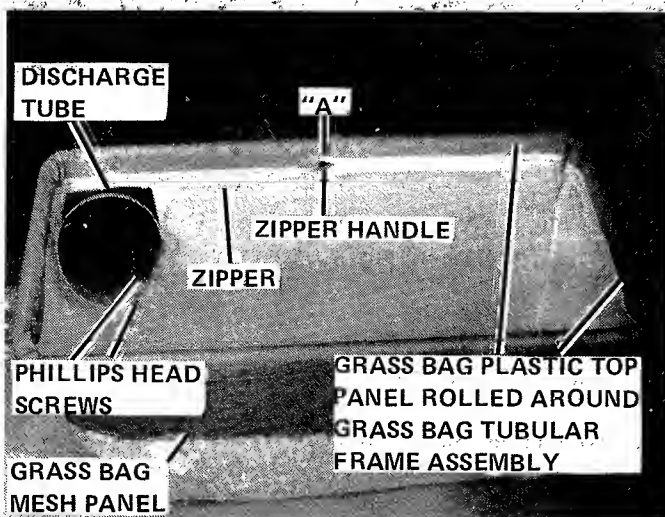


Figure 4.

5. See Figure 3. The grass bag tubular frame assembly, on which the grass bag hangs, has two tubular supports welded to its front side in position to fit over vertical supports. To install bag on this frame, bag zipper must be completely unzipped, allowing grass bag plastic top panel to unfold.

6. On front side of grass bag, opposite mesh panel, there are two holes in plastic top panel. Insert two tubular supports welded to grass bag frame down through these two holes with cloth portion of bag toward inside of frame and with plastic top panel on outside of frame.

7. Roll plastic top panel up and over frame tube and bring two halves of zipper together on inside of frame. Connect ends of zipper together at point "A". See Figure 4. Work zipper handle counter-clockwise completely around frame.

8. See Figure 3. Install frame and bag assembly in vertical supports. Insert rear end of discharge tube in hole at left front corner of grass bag. See Figure 4.

9. See Figure 5. To install grass bag cover, position it above bag, align cutout on front side with discharge tube, and push down firmly to snap spring clips over outside of bag frame, and top panel.

WARNING

Before emptying grass bag, always stop tractor, disengage power take-off drive to mower, place transmission in neutral, apply parking brake, and stop engine.

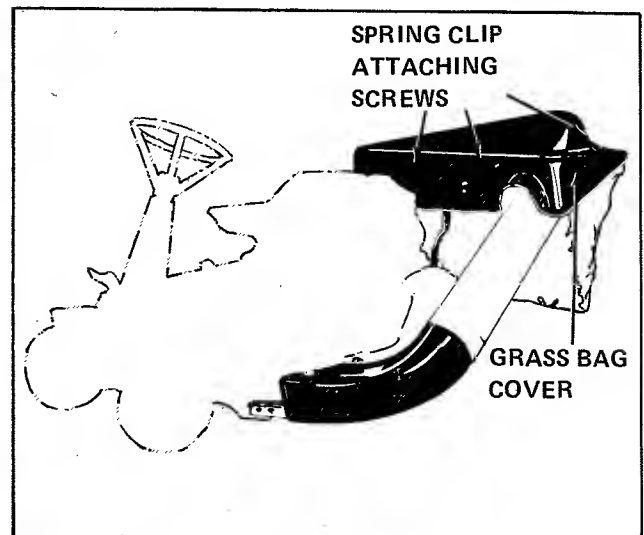


Figure 5.

10. To empty grass bag, pull up on cover to unsnap spring clips and remove cover. Lift bag and frame straight up until frame tubular supports come off of vertical supports. Turn bag and frame over to dump grass clippings. Replace bag tubular supports over vertical supports and lower in place, slipping bag over discharge tube. Place grass bag cover over bag frame and snap clips in place over bag frame.

NOTE: One front counterweight is recommended when using grass catcher on slopes 15-30 percent. Mowing slopes greater than 30% is not recommended.

OPERATION

PREPARING

Controls

Before attempting to use the riding mower, acquaint yourself with all of the controls and how they operate.

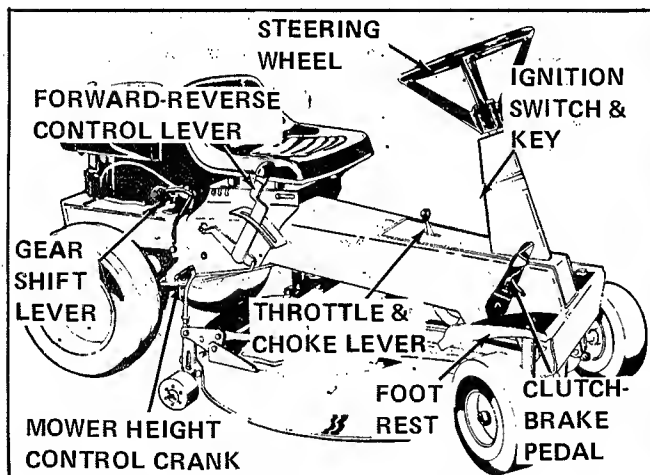


Figure 6.

a. Clutch Brake Pedal

See Figure 6. Pushing the clutch-brake pedal forward first, loosens and disengages the transmission drive belts. Further forward motion of the pedal applies the brakes.

b. Throttle and Choke Lever

See Figure 6. The throttle and choke lever controls the engine speed from idle to full speed. Moving the lever farther forward past the "fast" position applies the choke for starting the engine. As soon as engine starts the lever should be pulled back to mid-range and engine allowed to warm up a few minutes before applying a load. When operating at full throttle be careful that the lever is not moved so far forward that the choke is partially closed.

c. Gear Shift Lever

See Figure 6. Pulling up on gear shift lever places the transmission in low range. Pushing down engages the high range gearing. Shift lever must be placed in neutral midway between high and low range to engage a safety interlock switch to permit starting the engine (Figure 7). To shift gears with engine running, either the clutch-brake pedal must be fully depressed, or the forward reverse control lever must be placed in neutral.

d. Forward-Reverse Control Lever

See Figure 6. The forward-reverse control lever operates the transmission shuttle clutch and permits starting and stopping the tractor in either forward or reverse direction without shifting gears or using the foot clutch. The shuttle clutch may be used for a short time to "inch" the tractor forward or backward, and to start and stop motion smoothly. IT MUST NOT be used as a speed change device. All continuous operation MUST be done in either fully forward or fully rearward position.

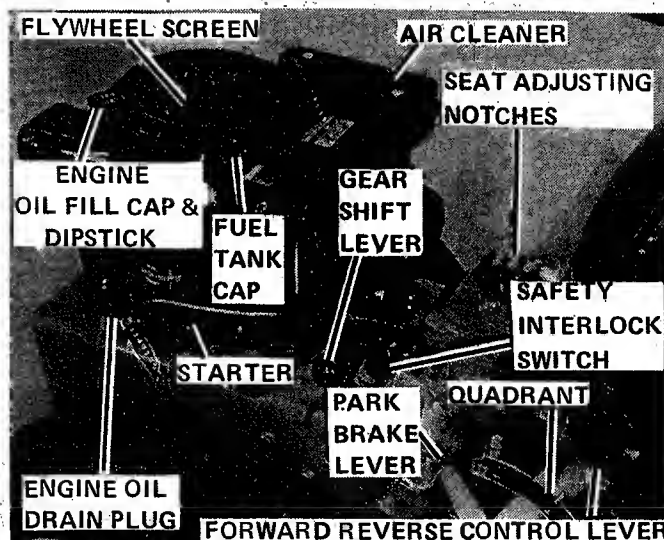


Figure 7.

To operate in forward direction, select high or low gear shift range. With engine running and clutch-brake pedal fully up in engaged position, move forward-reverse control lever smoothly, but firmly, forward and engage it in forward notch in quadrant. To stop, disengage lever from forward notch and pull it smoothly, but firmly, to rear and place in neutral notch.

To operate in reverse for any appreciable distance, pull the lever from neutral to the rear end of quadrant and hold it there until you wish to stop rearward travel; at which time it should be pushed forward to neutral notch. When operating in reverse, the control lever will automatically be returned to neutral when clutch-brake pedal is depressed.

e. Ignition Switch

See Figure 6. The ignition switch must be turned to the "Start" position to actuate the starter. As soon as engine starts; let go of key and it will automatically return to "On". Turn key to "Off" to stop the engine.

f. Parking Brake Lever

See Figure 7. The parking brake lever, located under the right side of the seat, is pushed down to engage brake. Brake should be engaged when leaving the tractor unattended.

g. Mower P.T.O. Drive Clutch Lever

See Figure 8. The mower PTO drive is engaged by pushing the mower drive clutch lever forward and down and is disengaged by pulling lever upward and back. A safety interlock switch requires that lever be in the disengaged position to start engine.

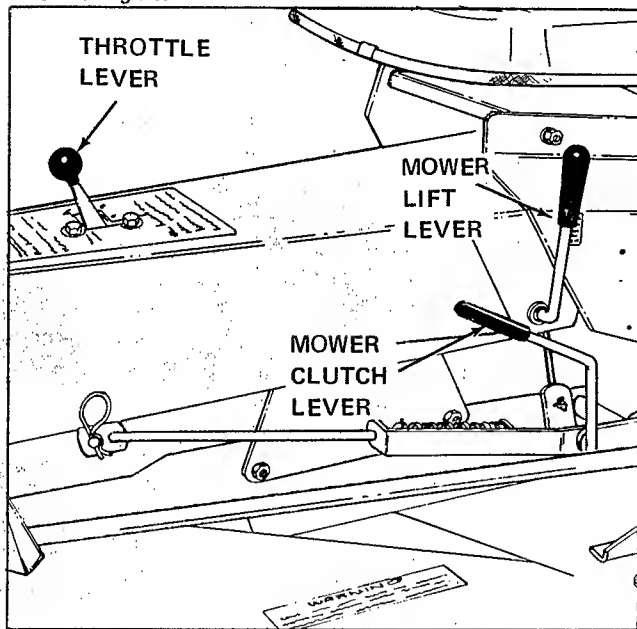


Figure 8.

CAUTION

Never leave the operators seat without disengaging mower drive.

h. Mower Height Control Crank

See Figure 6. The cutting height of the mower can be adjusted from 1-1/2 to 3-1/2 inches by rotating the height control crank. Turn clockwise to raise and counter-clockwise to lower.

i. Mower Lift Lever

See Figure 8. Pull back to raise mower and push forward and down to lower mower.

ENGINE

CAUTION

Study the Safety Rules in this manual and follow all of them when operating this riding mower.

a. Read the engine owner's manual thoroughly.

b. Check engine oil level, (Figure 7), and add oil as required to maintain level up to full mark on dipstick.

NOTE: Use only a high quality detergent oil classified as "SC", or "SD" or "MS". For summer operation, use SAE 30. If under 40 degrees, use 10W-30.

c. Fill the fuel tank (Figure 7) with a good grade of regular gasoline. DO NOT use premium gasoline and DO NOT mix oil with gasoline.

CAUTION

Gasoline is highly flammable. Avoid overfilling and wipe up any spilled fuel. Allow no open flame, smoking or matches near the area of refueling.

MOWER

a. Be sure that you are familiar with the safety precautions, controls and operating instructions given in this manual.

b. Check the mower carefully to be sure that it is properly installed, leveled, and adjusted - (See Adjustments).

CAUTION

NEVER OPERATE THE MOWER unless the deflector assembly and discharge guard are securely bolted in place, (See Figure 9).

c. Check the condition of mower blade. Keep it sharp and in balance.

d. Clear the lawn of all sticks, stones, wire and other debris which may be caught or thrown by the mower blade.

e. Determine the best method of mowing according to the dimensions, terrain and obstructions of the lawn.

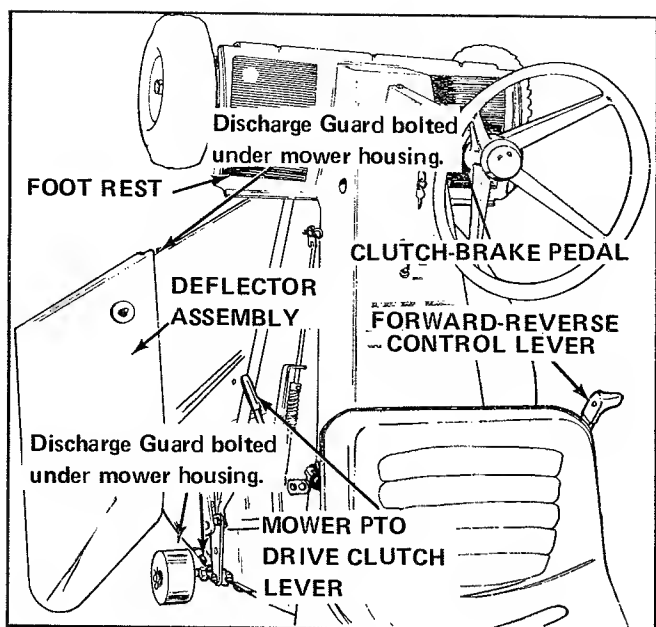


Figure 9.

OPERATING

STARTING (Figures 6, 7 and 8)

1. Place gear shift lever midway between "Hi" and "Lo". Place forward-reverse control lever in the neutral notch in quadrant and raise the mower PTO drive clutch lever to the disengaged position to actuate the safety interlock switches.
2. Lock the parking brake.
3. Move the throttle lever forward into the "Choke" position.
4. Turn the ignition switch to the "Start" position to actuate starter. As soon as engine starts, let go of key and pull throttle lever back to middle of its running range. Allow engine to warm up a few minutes before putting it under load.
5. If the starter will not operate, turn ignition key to off and check that both the gear shift lever and mower PTO drive clutch are in neutral position and are actually actuating the safety interlock switches (Figures 7 and 8).
6. If engine fails to start after being turned over 5 or 10 seconds with the safety interlock switches closed, the engine may be flooded. If this is the case, pull throttle back to middle of the range to disengage choke and turn engine over several times to clear out excess fuel.

TRAVEL

1. With engine running, set engine throttle between 1/4 and 1/2 open. Engine speed for mowing should be 3/4 to full throttle. When grass is wet or over 3-inches high, full throttle is best.

2. With forward-reverse lever in the neutral notch, move the gear shift lever into "Lo" or "Hi" range. Transmission gear could be placed in "Lo" range when mowing heavy or wet grass and when on rough or sloping terrain. Use "Hi" range on dry, moderate sized grass on smooth terrain. It is necessary to place forward-reverse control lever in neutral or depress the clutch brake pedal to stop tractor before shifting gears.

NOTE: If there is any tendency for gear teeth to "clash" when shifting, depress the clutch brake pedal fully. Release clutch brake pedal slowly and remove foot from pedal.

CAUTION

When operating the tractor for first time put transmission in "Lo" gear until you become acquainted with the controls and operation of the tractor.

3. Grasp steering wheel, straighten front wheels, and look carefully around to make sure that the area in which you plan to drive is clear of obstructions, people and pets.

4. Refer to "Forward-Reverse Control Lever" explanation in the "Controls" section of this manual and engage forward reverse control lever to start ground travel as instructed.

5. The forward-reverse control lever is not a speed control device and for all continuous operation it must be positioned either fully forward or fully rearward. Practice starting, stopping, steering, shifting gears, faster throttle settings, operating in reverse, etc. until you can operate the riding mower smoothly and easily.

STOPPING

1. Ground travel is normally stopped by placing the forward reverse control lever in neutral position and moving gear shift lever to neutral. This action will only stop forward or reverse drive, it will not brake the vehicle to a stopped position.
2. Ground travel can also be stopped quickly by fully depressing the clutch brake pedal. When forward-reverse control lever is in reverse, depressing clutch brake pedal automatically overrides any position the shuttle control lever would be in. When pedal is released vehicle will assume operation in the position of the shuttle control lever.

NOTE: Do not keep foot on clutch brake pedal during operation. To do so can result in "clutch riding" and excessive slippage and wear on drive belts. Place foot on foot rest.

3. To stop engine, turn the ignition key to the "Off" position and remove key from ignition switch.

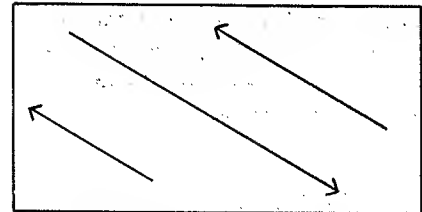
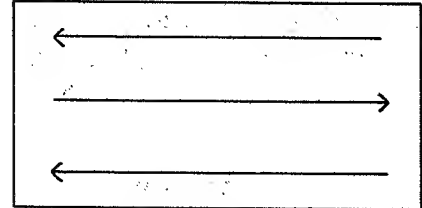
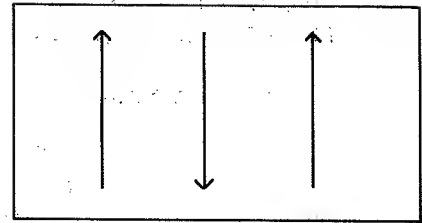
Before stopping engine that has been operating under load allow engine to idle for a few minutes "cooling off" time.

CAUTION

Never leave the tractor seat unless the power take off is disengaged, transmission is in neutral and engine is stopped. If leaving the tractor unattended, **ALWAYS** remove ignition key.

MOWING PATTERN

1. For the first use of the mower choose a smooth level area. Cut long straight strips overlapping slightly. After becoming familiar with the operation proceed to inclined or rougher ground.
2. The size and type of area to be mowed determines the best mowing pattern to use. Obstructions such as trees, fences and buildings must also be considered. In most cases, making one or two passes in a counter-clockwise direction around the outside of the area to be mowed is advisable to keep cut grass off of fences, walks, etc. The remainder of the mowing should normally be done in a clockwise direction so the clippings are dispersed on the cut area.
3. Always keep the right side of mower toward trees, posts, or other obstacles on the first pass around obstacle.
4. On moderate size, frequently mowed lawns where grass is light and dry it is sometimes practical to mow in a counter-clockwise direction so that clippings are thrown toward the center of the lawn and concentrated for easy pickup and removal.
5. Most lawns should be mowed to keep the grass approximately two to three inches high. Best results are obtained by cutting often and not too short. To keep a green lawn, never mow more than one third off the height of the grass or a maximum of one inch in one mowing. For extremely tall grass, set the cutting height at maximum for first mowing, then reset to the desired height and mow again. Allow the grass to grow to three inches, then cut off only the top inch.
6. On thick or springy grass or soft ground, the mower rollers may sink into the ground giving too low a cut. Adjust the cutting height to get the desired height of cut.
7. For best appearance, grass should be cut in the afternoon or evening when it is free of moisture.
8. Where possible change patterns occasionally to eliminate matting, graining and a corrugated appearance. See diagrams below.



CAUTION

DO NOT WORK around mower housing area until you are certain that the mower blade has stopped rotating.

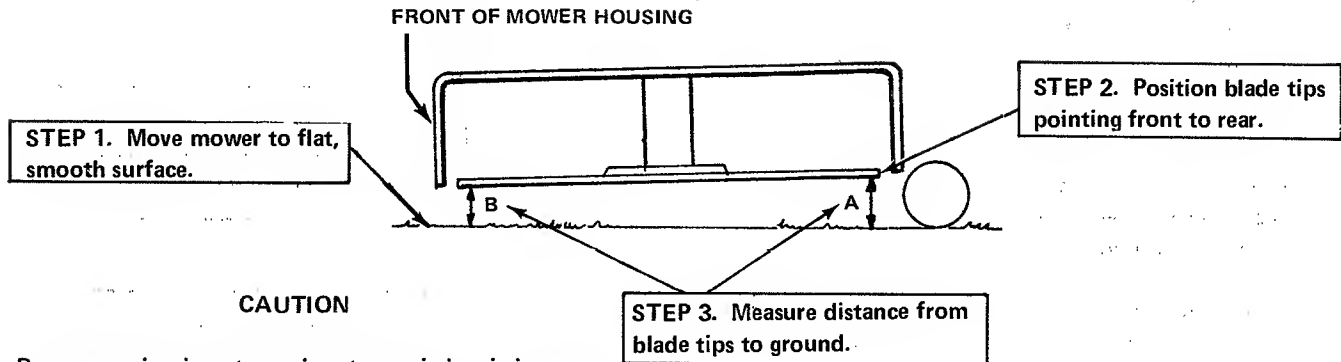
Heed the **CAUTION DECAL**, the **DANGER DECAL**, and the **WARNING DECAL** located on the mower housing. Make certain the discharge guard and deflector assembly are always in place before operating mower.

ALWAYS disconnect the mower drive clutch and stop engine before leaving the tractor seat. If leaving the tractor and mower unattended, remove the ignition key.

ADJUSTMENTS

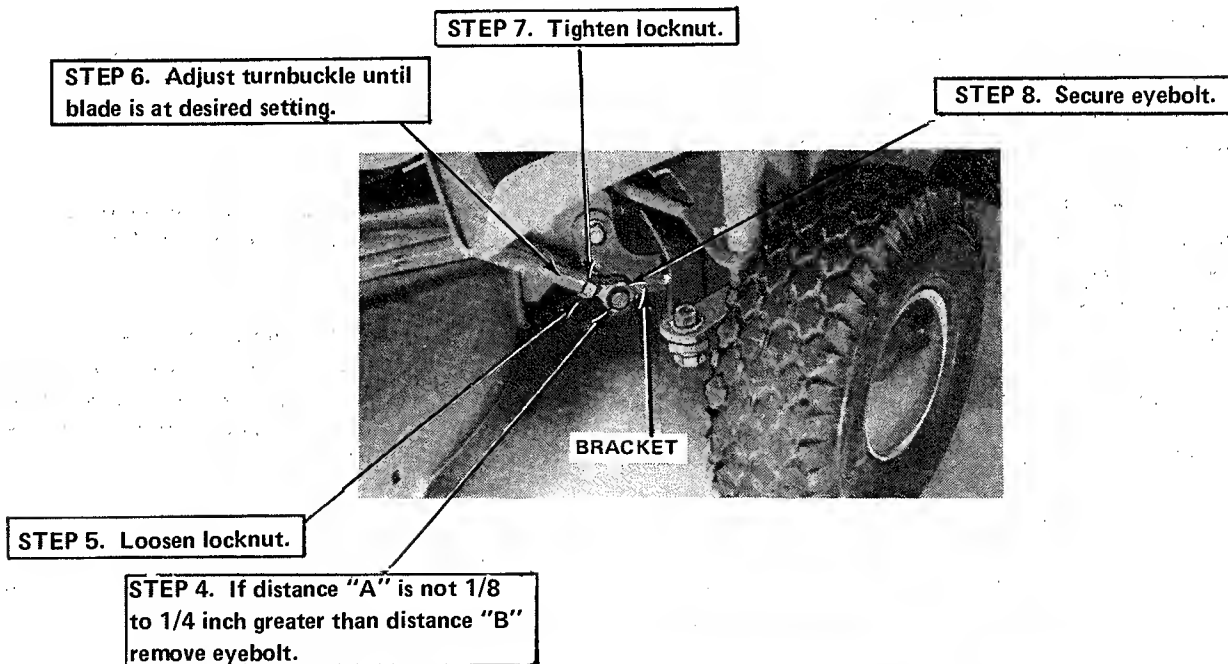
IF VEHICLE IS PLACED ON END FOR OVER A 2 HOUR PERIOD, THE BATTERY MUST BE REMOVED AND THE FUEL TANK DRAINED.

MOWER BLADE FRONT-TO-REAR PITCH

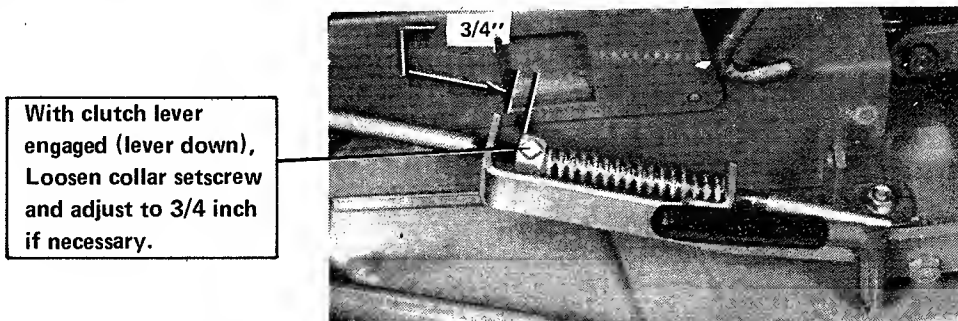


CAUTION

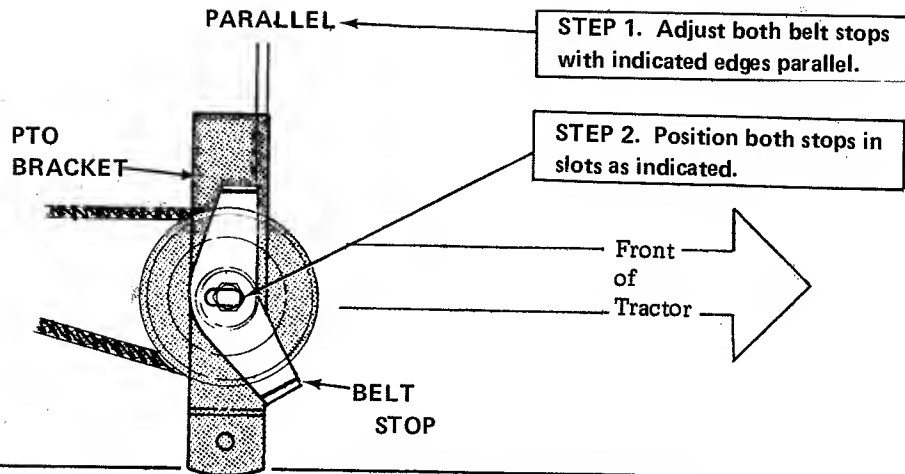
Be sure engine is not running, transmission is in gear and mower drive is disengaged (clutch lever up). Block the wheels, front and rear, to prevent rolling while working on mower blade.



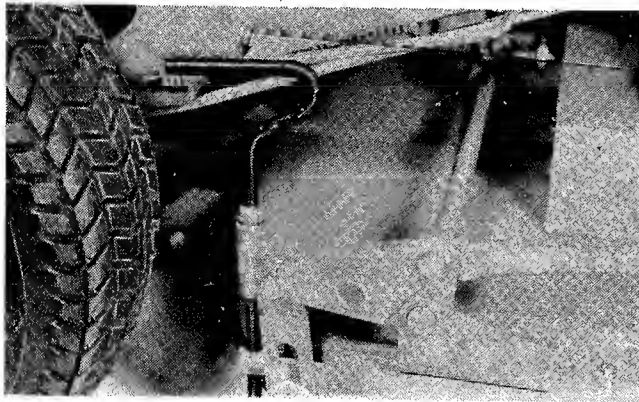
MOWER ENGAGEMENT



MOWER BELT STOPS



MOWER BLADE CUTTING HEIGHT



Raise or lower entire mower by turning handle clockwise to raise counter-clockwise to lower.

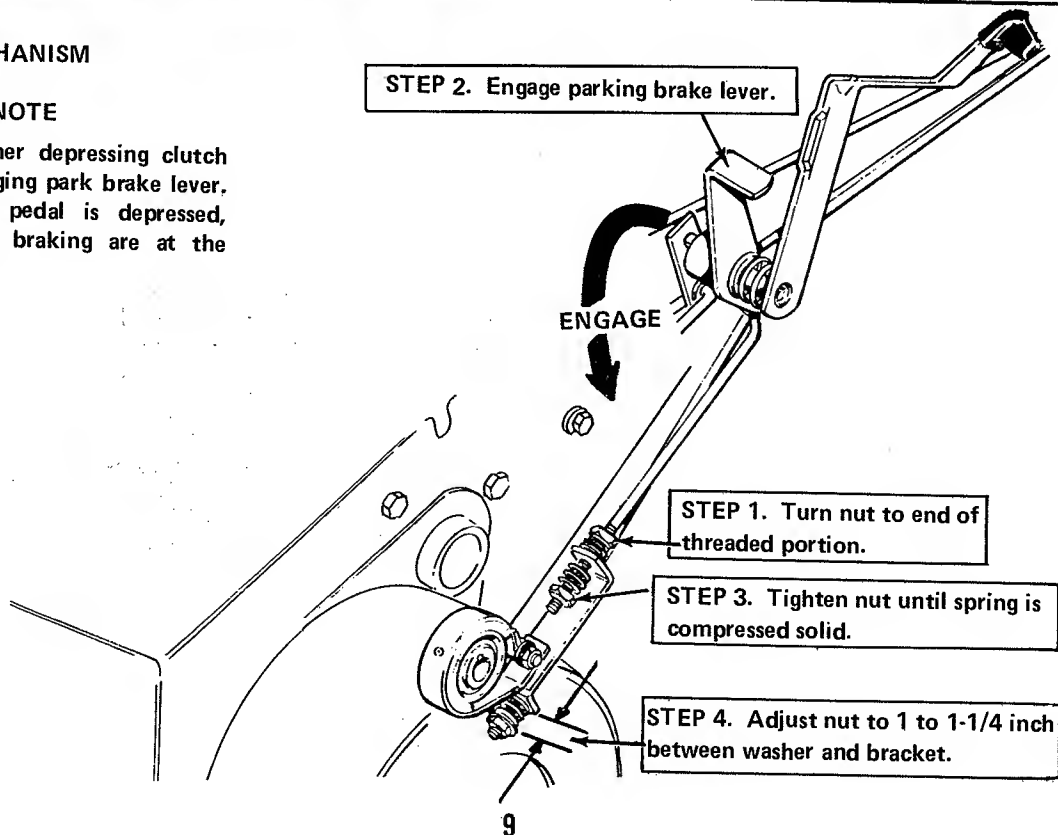
NOTE

Suggested Cutting Height 2 Inches.

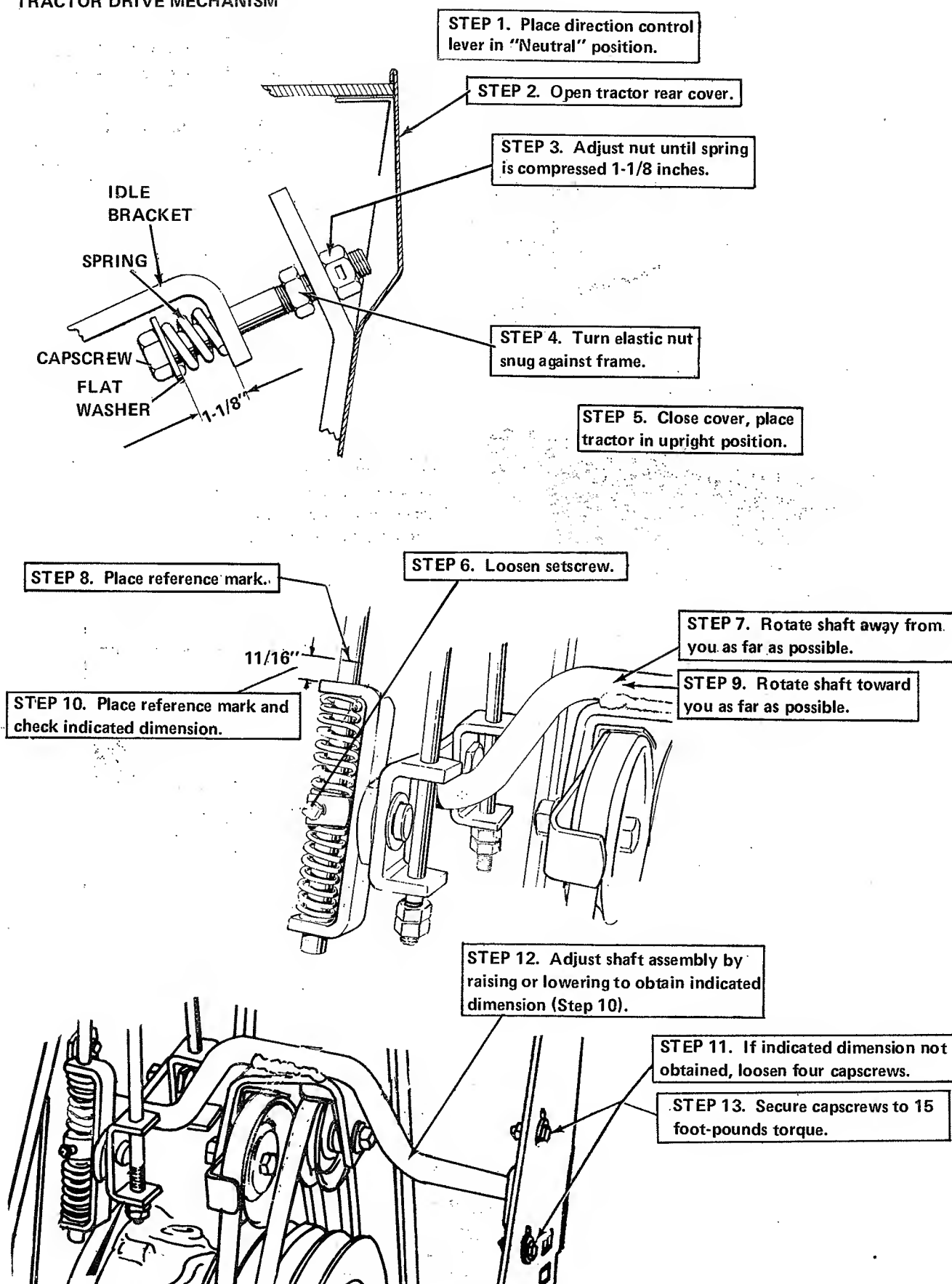
BRAKE MECHANISM

NOTE

Brake by either depressing clutch pedal or engaging park brake lever. When clutch pedal is depressed, clutching and braking are at the same time.



TRACTOR DRIVE MECHANISM



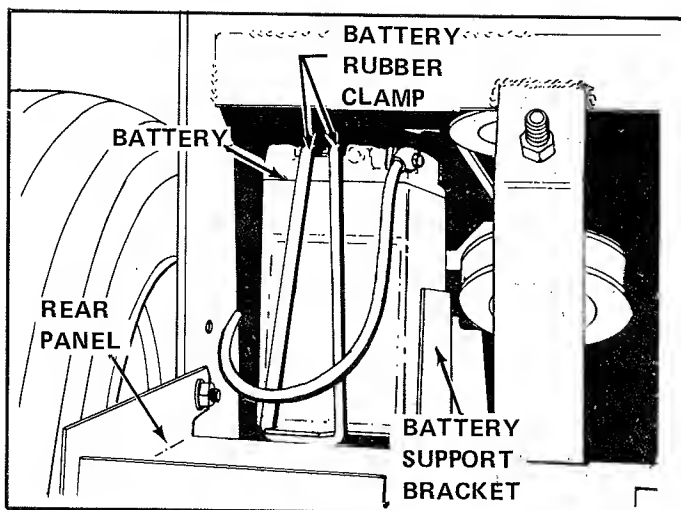


Figure 15.

CAUTION

The maximum charge rate of this battery is 1.5 amps. Any higher charging rate will damage battery.

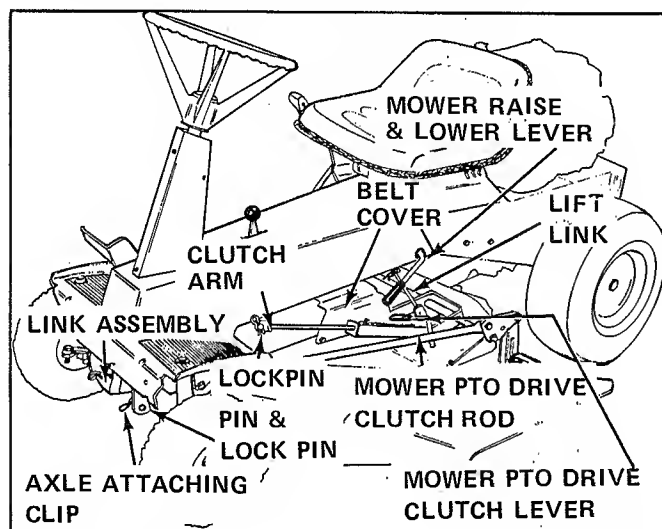


Figure 16.

MOWER INSPECTION

After each mowing clean the grass clippings and material from the mower housing and inspect the blade for sharpness and straightness.

WARNING

Be sure that tractor engine is stopped, ignition key is turned to "Off" and removed from switch, gear shift lever is in neutral, forward-reverse control lever is in neutral, mower drive clutch is disengaged and that mower knife has stopped turning before attempting to inspect or clean mower housing.

If blade is bent, damaged or dull, the mower will have to be removed from the tractor.

WARNING

DO NOT try to remove or sharpen blade with mower attached to tractor.

MOWER REMOVAL AND INSTALLATION
(Figure 16)

Remove mower as follows:

1. Lower mower to ground and remove lift link from raise and lower lever.
2. Pull lock pin holding front of mower PTO drive clutch rod to tractor and lay clutch rod on top of mower. Swing PTO clutch lever forward for clearance.
3. Remove pins and lock pins holding mower link assembly to axle attaching clips. Lower front of mower to ground.
4. Raise rear end of belt cover and remove mower drive belt from mower driven pulley.
5. Lift front end of tractor and push tractor backwards until front wheels can be set on the ground back of mower.

Install the mower as follows:

1. Position mower on ground with rear of mower in front of tractor front wheels. Pick up front of tractor and pull tractor forward on its rear wheels until front wheels can be set down on ground in front of mower.
2. Lift rear end of belt cover and install mower drive belt over mower driven pulley. Lower belt cover to hold belt in place.
3. Lift front end of mower and attach link assembly to axle attaching clips with pins and lock pins.
4. Attach front end of mower PTO drive clutch rod to clutch arm on tractor with lock pin. Engage clutch and check that belt is properly seated in the pulleys.
5. Attach lift link to raise and lower lever and raise mower.

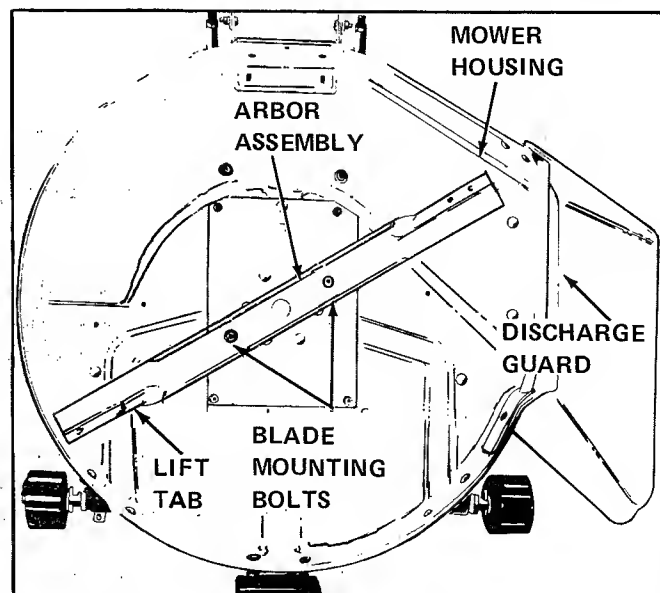


Figure 17.

BLADE REPLACEMENT

1. Remove the mower from tractor as outlined on preceding pages and turn mower upside down.
2. Wedge a block of wood securely between the end of blade and the mower housing to prevent blade turning while loosening and tightening bolts. Remove the two blade mounting bolts and the blade.

WARNING

ALWAYS handle blade with extreme care to avoid injury.

3. If blade is bent, do not try to straighten it for reuse. Replace it with a new blade.
4. If blade is straight and has no large nicks, you can sharpen it yourself. Clamp blade securely in a vise and use a large mill file along the original bevel. File to a sharp edge.
5. Place a small rod through the center hole of blade and check for balance. File more metal off of heavy side until blade does balance.
6. See Figure 17. Carefully clean blade and part of arbor that blade fastens to. Install new or sharpened blade with the lift tabs on blade end turned toward top of mower housing. The blade mounting bolts should be tightened to 30- foot -pounds of torque.
7. Rotate blade slowly by hand to see that it clears the housing all around and that the blade tips are running in a true plane. If the tips of the blades move up and down in relation to the mower housing as blade is turned, or if blades are hard to rotate, the arbor shaft or housing may be bent.

MOWER DRIVE BELT REPLACEMENT

NOTE: Refer to Figure 18 for location of pulleys and belts.

1. Remove mower as instructed in MOWER REMOVAL AND INSTALLATION.
2. See Figure 19. Loosen belt stop and pulley mounting nuts and position belt stop so that stop fingers allow for belt removal. Remove mower drive belt from mower idler pulleys.
3. See Figure 20. Open rear cover of vehicle and pull mower drive belt from drive pulley. Slowly guide belt through vehicle and remove it through rear cover opening.
4. Install new mower drive belt in reverse order of removal. Belt stops must be positioned in their slots with fingers approximately 1/16-inch from belt. Adjust mower clutch lever as instructed in ADJUSTMENTS section of this manual.

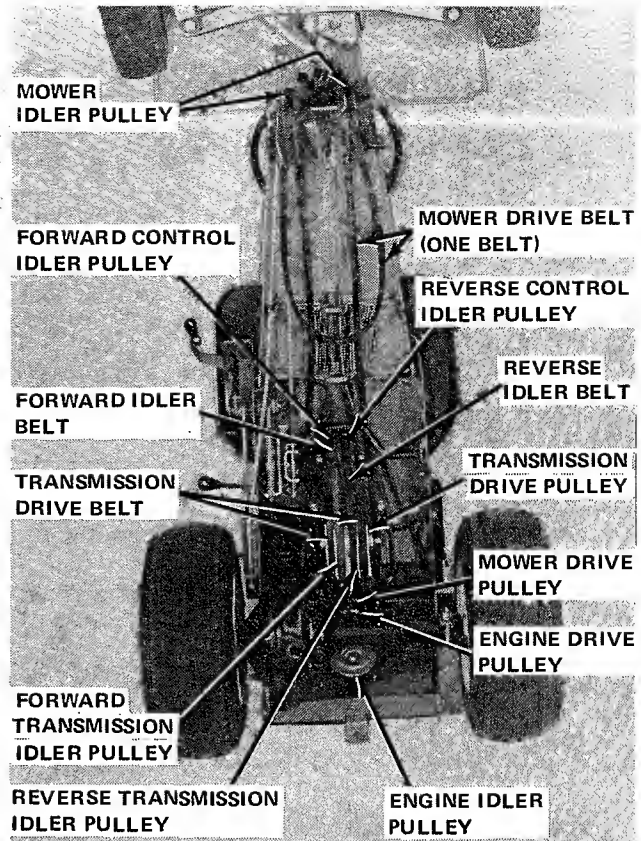


Figure 18.

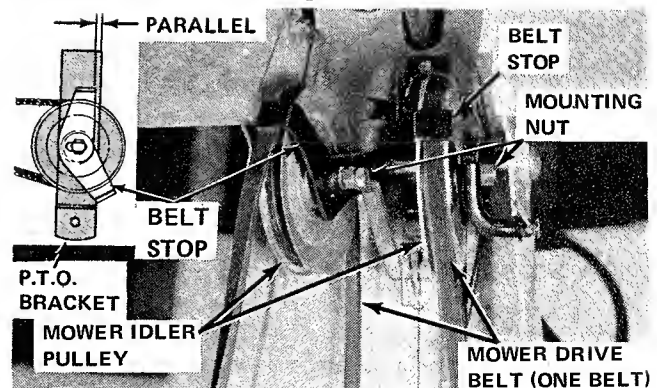


Figure 19.

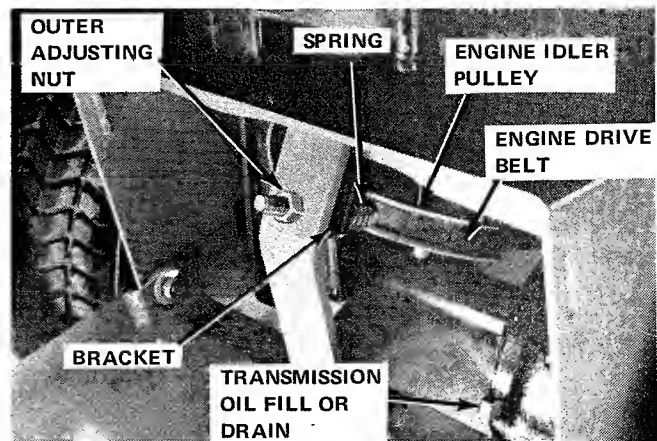


Figure 20.

TRANSMISSION DRIVE BELT REPLACEMENT

NOTE: Refer to Figure 18 for location of pulleys and belts.

1. See Figure 20. Open rear cover of vehicle and push engine idler pulley in against spring until engine drive belt can be slid from pulley. If spring does not allow sufficient compression to allow belt removal, loosen outer adjusting nut a few turns.

2. See Figure 18. Disengage engine drive belt from engine drive pulley and remove from rear cover opening.

NOTE: Engine drive belt is only one belt and it engages transmission drive pulleys in opposite directions. The engine drive pulley is smaller than its neighboring mower drive pulley.

3. Working through rear cover opening, install new transmission drive belt on engine drive pulley. Carefully work belt over outside transmission drive pulleys and depress engine idler pulley (Figure 20) enough to slip new engine drive belt in place. Adjust drive belt as instructed in ADJUSTMENTS section of this manual.

FORWARD AND REVERSE IDLER BELT REPLACEMENT

NOTE: Refer to Figure 21 for location of pulleys and belts.

1. Remove transmission drive belt as instructed in TRANSMISSION DRIVE BELT REPLACEMENT.

2. Loosen belt stop mounting bolts and slide them forward enough to slide either or both idler belts from either or both control idler pulleys.

3. Remove either or both idler belts from their respective transmission idler pulleys.

4. Install new forward and/or reverse idler belts in reverse order of removal. Belt stops must be positioned 1/16-inch from belt. Pivot-shaft assembly must be secured sufficiently forward to allow controls to activate either forward or reverse belt. Refer to complete ADJUSTMENTS procedure of this manual for proper belt tension.

BELT CARE

1. Inspect belts frequently for proper alignments.
2. Keep belt tension properly adjusted.
3. Keep belt guides in right position.
4. Keep pulleys in alignment.

If oil should be spilled on a belt, wipe it off at once with a cloth, then wash belt with warm, (not hot) water and a detergent.

GENERAL REPAIRS

To prevent rusting, sand off and paint any parts or areas which become chipped or damaged. Apply a good rust preventive to all bare metal parts. Tighten all fasteners and shields securely.

OFF SEASON STORAGE

1. Gasoline stored for several months can develop gum deposits which clog carburetors. To prevent this, purchase a good grade gasoline stabilizer from your dealer and follow directions on the can to treat the gasoline in the tank and in your gasoline container. Operate engine long enough to make certain that engine is warm and that the treated gasoline is in the carburetor.

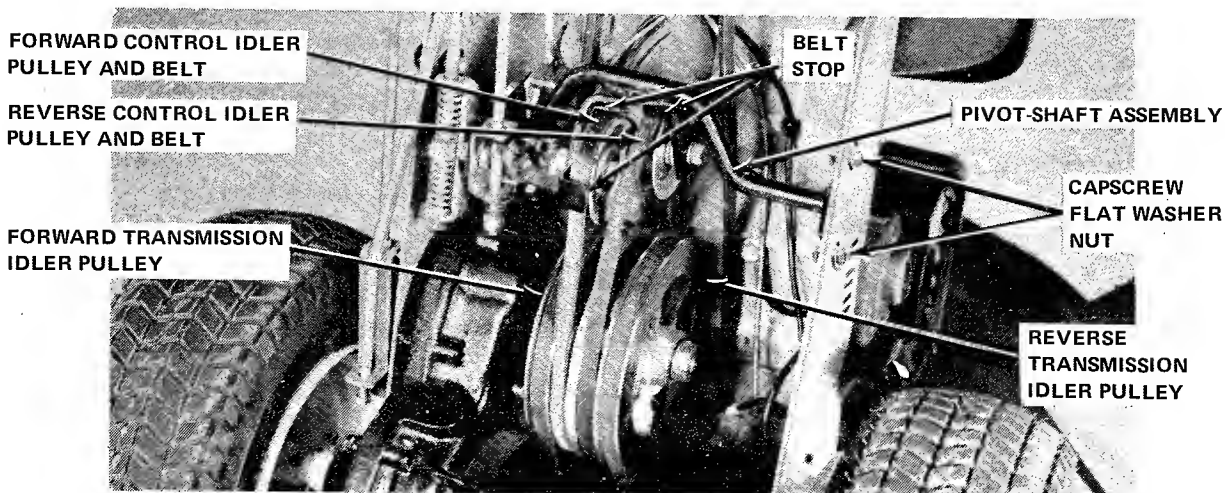


Figure 21.

2. Stop engine and drain and refill crankcase while engine is warm. SEE MAINTENANCE section of this manual.

3. Remove spark plug, pour 1 oz. 10W-30 oil into cylinder through spark plug hole. Crank engine a few times to distribute oil. Reinstall spark plug.

4. Clean dirt and chaff from cylinder head fins and engine housing.

5. Apply grease to all fittings and light engine oil to all points listed in "Grease Fittings and Oil Application". SEE MAINTENANCE section of this manual.

6. When engine is cool, fill fuel tank full of stabilizer treated gasoline to keep air out of tank which could cause condensation.

7. Block the machine up off the wheels to relieve weight and keep tires off a damp floor. Protect the tires from prolonged exposure to direct sunlight.

8. Store the machine in a dry place outdoors.

STARTING AFTER STORAGE

1. Remove the spark plug and wipe it dry. Crank the engine a few times to blow the excess oil out of the spark plug hole, then reinstall the spark plug.

2. If needed fill the fuel tank completely with fresh "Regular" gasoline.

3. Service the air cleaner. (See "AIR CLEANER").

4. Check the crankcase oil level and replenish if necessary. (See "Engine Oil").

5. Start the engine and let it operate slowly. DO NOT operate at high speed immediately after starting. Operate the machine outdoors or in a well ventilated area.

6. Inflate the tires to operating pressure. 10 pounds rear, 24 pounds front.

TROUBLESHOOTING

IF ENGINE FAILS TO START, check the following:

1. Ignition switch must be "On".

2. Throttle lever should be forward in "Choke" position unless engine is flooded. If flooded move throttle back to mid-range.

3. Gear shift lever must be in neutral engaging the safety interlock switch.

4. Mower PTO drive clutch lever must be up in the disengaged position to engage the safety interlock switch.

5. Forward-reverse control lever must be in neutral.

6. Spark plug cable must be securely connected.

IF BELT SLIPPAGE OCCURS, check the following:

1. Belts may be stretched or excessively worn.

2. Pulleys may be greasy or oily.

3. Insufficient belt tension due to a broken or worn tension spring.

IF A BELT BREAKS, check the following:

1. Look for sharp edges or rough spots on pulleys.

2. Pulleys may be misaligned.

3. Belt tension may be too tight.

IF HANDLING IS DIFFICULT, check the following:

1. Controls or drive systems may be out of adjustment.

2. Tires under-inflated. Inflate rear tires to 10 pounds, front tires to 24 pounds.

3. Wheels spinning on slopes. Wet grass is very slippery. Mow in the late afternoon after it has dried.

IF AN UNEVEN CUT RESULTS, check the following:

1. Mower may not be adjusted properly. See ADJUSTMENTS section of this manual.

2. Mower housing may be bent or damaged.

3. Blade arbor tube may be bent.

IF A POOR OR ROUGH LOOKING CUT RESULTS, check the following:

1. Blade may need sharpening.

2. Grass may be too tall or gone to seed.

3. Drive belt may be slipping.

4. Mower may be out of adjustment.

5. Engine speed may be too slow. Run at 3/4 to full throttle.

CAUTION

IF VIBRATION OCCURS, stop tractor immediately. disengage mower drive clutch, stop engine and check the following.

1. Arbor shaft or tube (or both) may be bent.

2. Blade may be unbalanced or damaged.

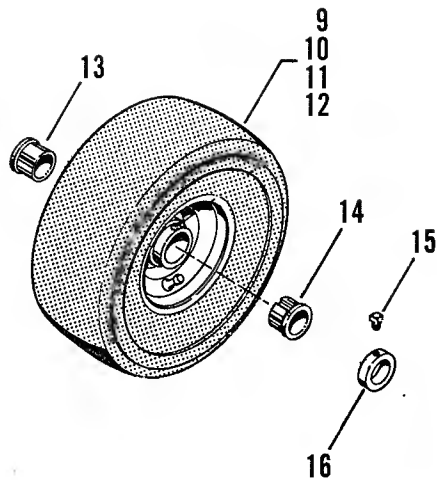
3. Drive pulley may be bent or misaligned.

Repair any damage and correct out of balance condition before starting mower.

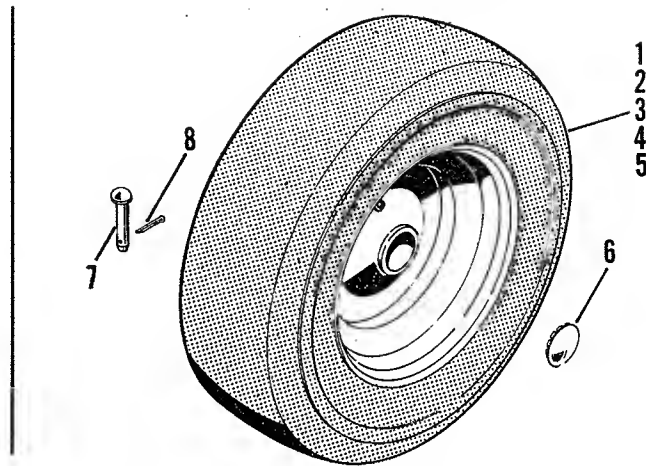
For instructions on removal and installation of mower see MAINTENANCE section of this manual.

ENGINE		SPECIFICATIONS
Make	.....	Briggs and Stratton
Model No.	.....	190707
Type	.....	.0861-01
H.P.	.....	.8 @ 3600 RPM (Engine Mfg. Rating)
Displacement	.....	.19.44 cu. in.
GOVERNOR		
Type	.....	Adjustable, mechanical
Working Range	.....	.1800 - 3400 RPM for best mowing performance
LUBRICATION		
Type	.....	Gear Impeller System
Capacity	.....	.2-3/4 Pints extended oil fill for ease of servicing
STARTING		
.....	.....	Factory installed 12V electric with 3 amp alternator and solid state rectifier.
FUEL CAPACITY	.....	.3 Quart
TRACTION DRIVE TYPE		Hand operated forward, neutral, reverse V-belt shuttle drive to a two speed, all gear, fully enclosed transmission and differential.
Speeds @ 3400 RPM -Low	.....	Forward - 2.52 MPH, Reverse - 2.52 MPH
-High	.....	Forward - 3.92 MPH, Reverse - 3.92 MPH
CLUTCH AND BRAKE		Foot operated clutch-brake combination over-rides shuttle drive for emergency stops.
FRAME TYPE		
Front and Rear - U -Channel	.....	Heavy gauge steel
DIMENSIONS		
Width	.....	40-1/4" with mower and safety shield in place
Length	.....	.57-3/4"
Wheel Base	.....	.44-3/8"
Height	.....	Top of steering wheel 36-1/4"
Tread Width	.....	Front - 28", Rear - 28"
STEERING		
Ratio	.....	.3.81:1
Turning Radius (Inside Rear Tire)	.....	.22"
TIRE SIZE		
Front	.....	.410 x 3.50 x 4 Turf Tread - 24 pounds pressure
Rear	.....	.16 x 6.50 x 8 Turf Tread - 10 pounds pressure
ROTARY MOWER		
Width of Cut	.....	.30"
Mounting	.....	Full floating-attached to and tilts with front axle
Rear Support	.....	Three rollers, two adjustable for height and one fixed
Height Adjustment	.....	Stepless screw, range 1-1/2" to 3-1/2"
Distance between mower blade and deck	.....	.2-1/2" to 4-1/8" at chute
WEIGHT WITH MOWER		
Weight Net	.....	.346 pounds
Shipping Weight	.....	.406 pounds
ATTACHMENTS		
Available as extra Equipment	.....	Hub Caps
		Rear Mounted Grass Catcher
		Front Counterweight
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE		

FRONT & REAR TIRES



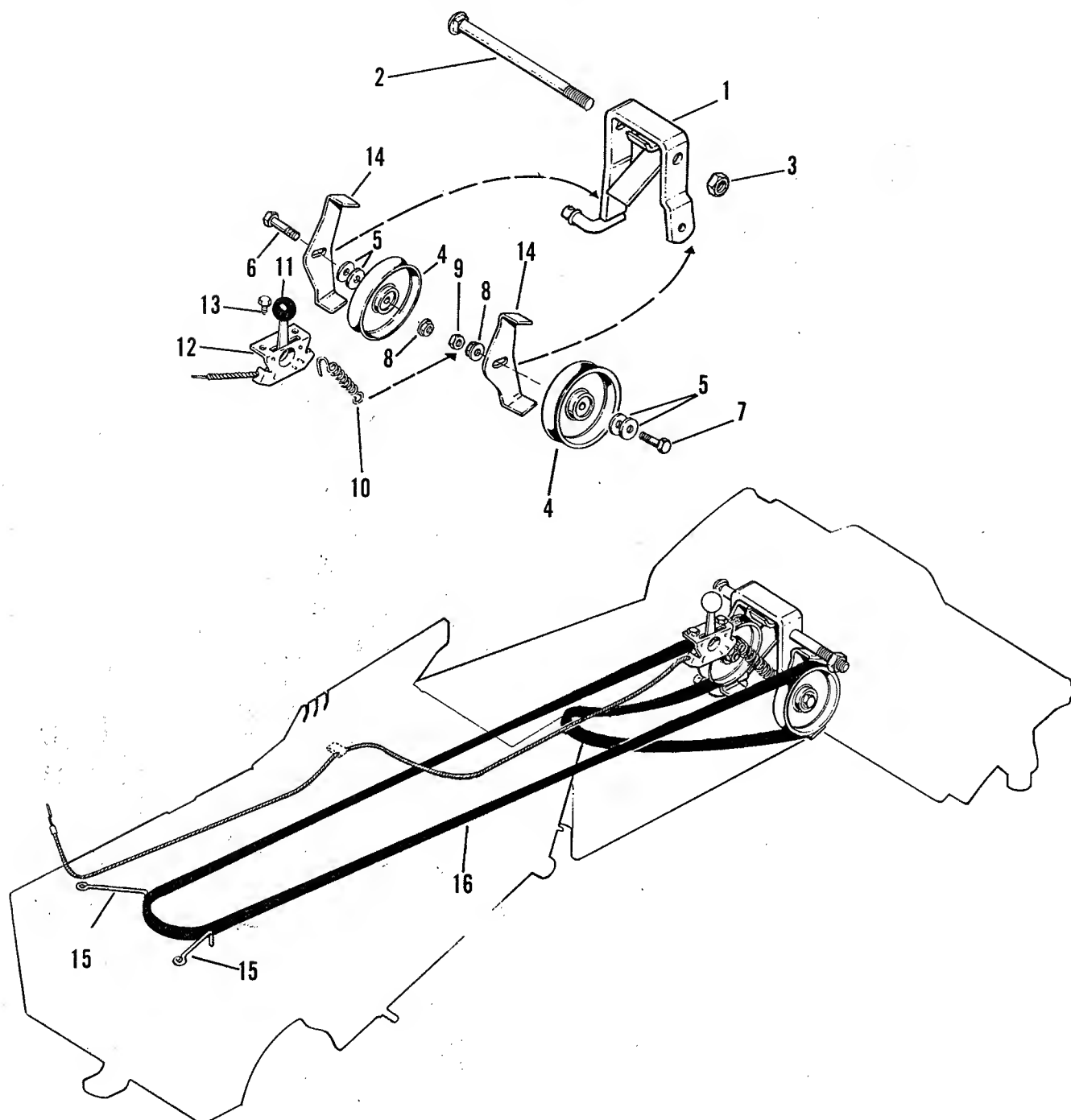
FRONT



REAR

Ref. No.	Part No.	Qty.	Description
1	171851	2	REAR WHEEL & TIRE ASSY. (Incl. Ref. Nos. 2 through 5)
2	171850	2	WHEEL ASSEMBLY
3	159156	2	TIRE, Tubeless
4	153038	2	TUBE
5	171270	2	CAP, Valve Stem
6	158433	2	BUTTON, Plug
7	118053	2	PIN Headed, drilled
8	918451	2	PIN, Cotter, 1/8" x 3/4" lg.
9	1608379	2	FRONT WHEEL & TIRE ASSY. (Incl. Ref. Nos. 10 through 14)
10	1608380	2	WHEEL
11	163108	2	TIRE
12	163109	2	TUBE
13	163110	4	BEARING
14	163111	4	BEARING, Relief
15	928691	2	SETSCREW, 5/16"-18 x 5/16"
16	8021010	2	COLLAR, Set

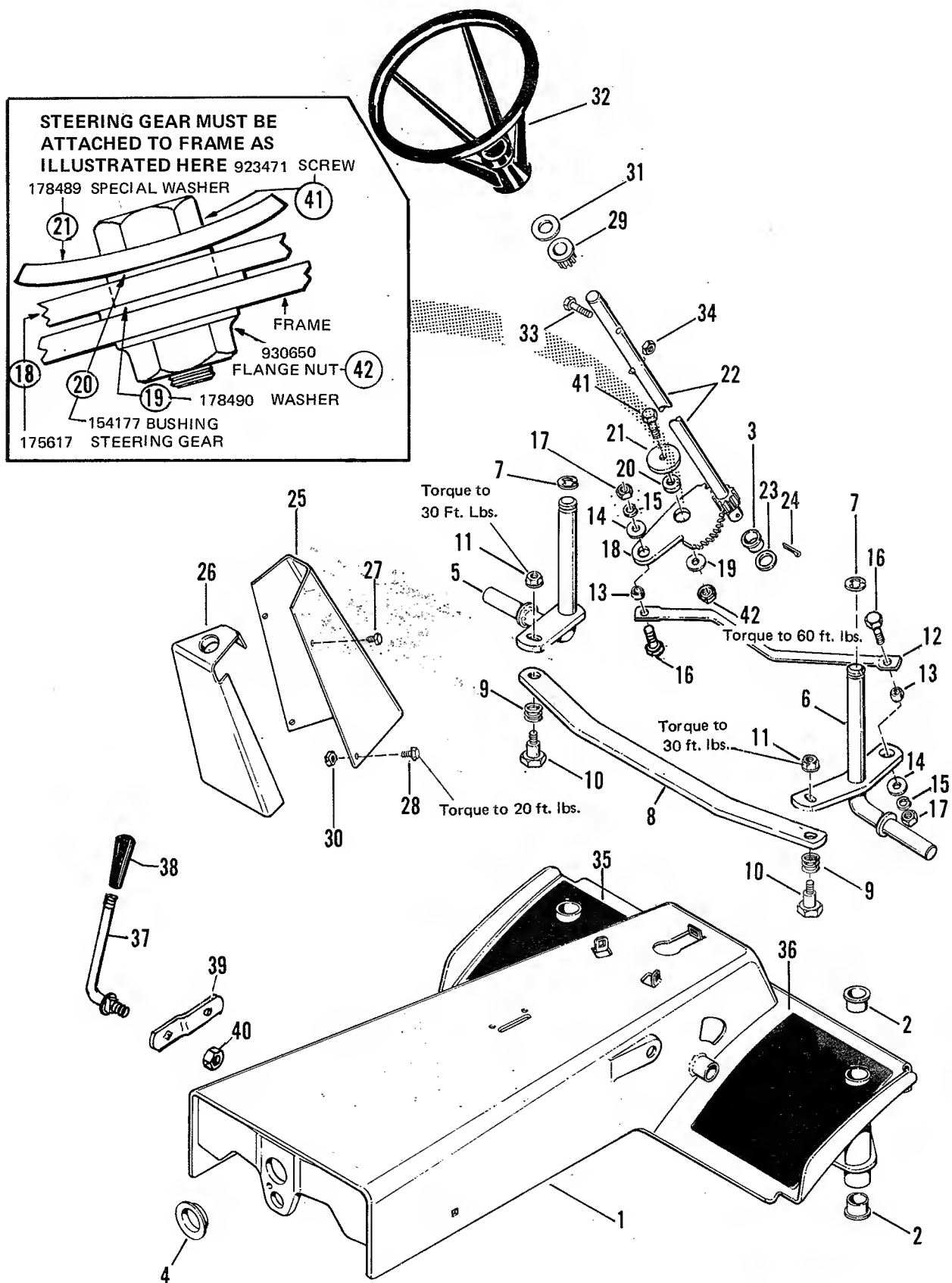
POWER TAKE OFF & THROTTLE CONTROL



Ref. No.	Part No.	Qty.	Description
1	1652301	1	PTO BRACKET ASSY.
2	927375	1	BOLT, Carriage, 1/2"-13 x 8"
3	930644	1	LOCKNUT, 1/2"-13
4	175954	2	PULLEY
5	157424	4	WASHER, Special
6	922606	1	CAPSCREW, Hex, 3/8"-16 x 1-3/4"
7	923701	1	CAPSCREW, Hex, 3/8"-16 x 2"

Ref. No.	Part No.	Qty.	Description
8	930645	2	NUT, flange, 3/8"-26
9	928731	1	LOCKNUT, 3/8"-16
10	106681	1	SPRING
11	1653116	1	KNOB, Throttle
12	176868	1	CONTROL, Throttle
13	929000	2	SCREW, Taptite, 1/4"-20 x 3/8"
14	176913	2	GUIDE, Belt
15	158499	2	STOP, Belt
16	176451	1	BELT, "V"

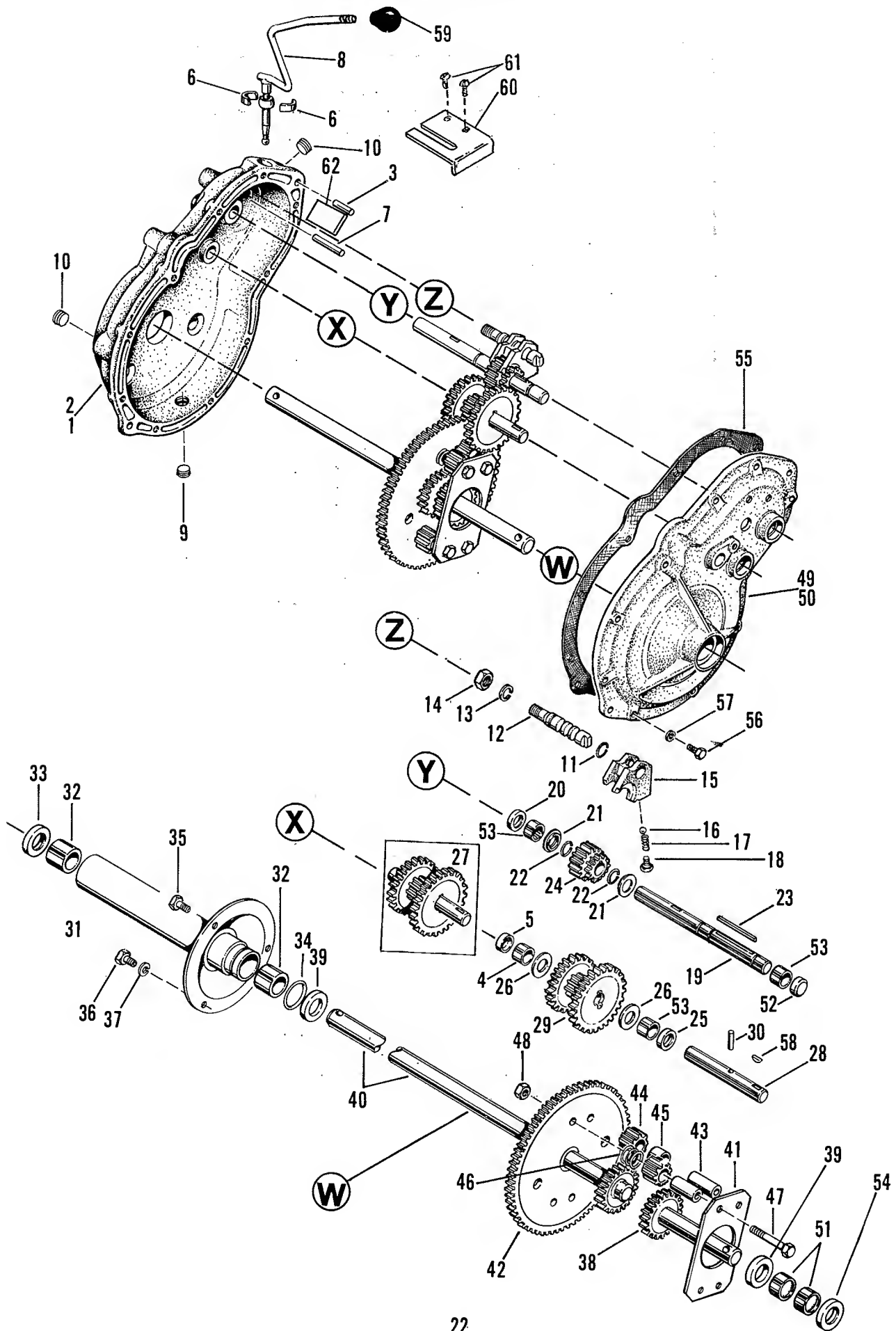
FRONT FRAME & STEERING



FRONT FRAME & STEERING

Ref. No.	Part No.	Qty.	Description
1	1652148	1	FRONT FRAME ASSEMBLY
2	176440	4	BUSHING
3	176444	3	BUSHING
4	176441	2	BUSHING, Pivot
5	1652150	1	SPINDLE, L.H.
6	1652152	1	SPINDLE, R.H.
7	157286	2	RING, Retaining
8	1652154	1	ROD, Tie
9	158578	2	SPRING
10	108412	2	BOLT, Shoulder
11	930645	2	NUT, Flange, 3/8-26
12	1652156	1	LINK, Drag
13	154177	2	SPACER
14	917642	2	WASHER, Plain, 5/16
15	916965	2	LOCKWASHER, 3/8
16	928726	2	CAPSCREW, Hex, 3/8-16 x 1-1/4 lg.
17	916950	2	NUT, Full, Hex, 3/8-16
18	1652158	1	GEAR, Steering
19	178490	1	WASHER, Special
20	176500	1	BUSHING
21	178489	1	WASHER, Special
22	175613	1	STEERING PINION ASSY.
23	121210	1	WASHER
24	920326	1	PIN, Cotter, 1/8 x 1-1/4 lg.
25	1652174	1	SUPPORT, Steering
26	1652167	1	PANEL, Rear
27	922122	3	SCREW, Self-Tapping, No. 10 x 1/2 lg.
28	930594	3	SCREW, Flange Head
29	157077	1	BUSHING
30	926022	3	NUT, Retainer
31	158223	1	WASHER, (As Required)
32	176501	1	WHEEL, Steering
33	921977	1	CAPSCREW, Hex, 5/16 -18 x 1-1/4 lg.
34	923362	1	LOCKNUT, Full hex 5/16-18
35	176809	1	PAD, Foot L.H.
36	176810	1	PAD, Foot R.H.
37	174664	1	HANDLE
38	1650149	1	KNOB
39	1650893	1	ARM ASSEMBLY
40	930645	1	NUT, Flange Hex
41	923471	1	CAPSCREW, Hex, 7/16-14 x 1-1/4
42	930650	1	LOCKNUT, Flange, 7/16-14

TRANSMISSION AND REAR AXLE

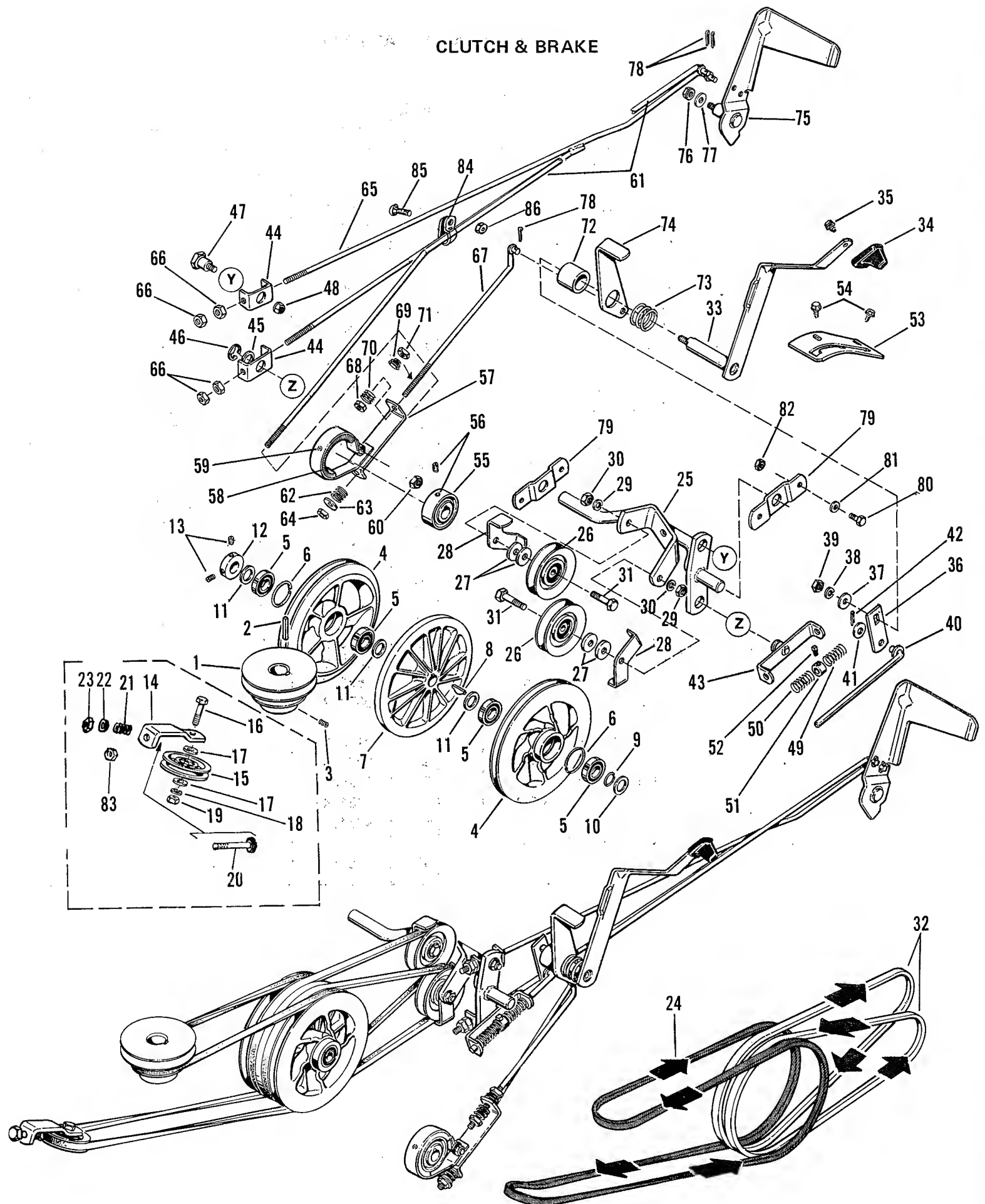


TRANSMISSION AND REAR AXLE

Ref. No.	Part No.	Qty.	Description
1	1652521	1	GEAR CASE ASSY. (incl. ref. nos. 2 through 8 and 62)
2	175330	1	CASE, Gear
3	918113	2	PIN, Roll, 3/8 x 1
4	163022	1	BUSHING
5	163050	1	PLUG, Expansion
6	101042	2	BUSHING, Ball, Half
7	917904	1	PIN, Roll
8	1652511	1	SHIFT ROD ASSY.
9	901653	1	PLUG, Pipe, 3/8
10	930676	2	PLUG, Pipe, 3/4
11	8061048	1	RING, Retaining
12	165004	1	SHAFT, shift, Rev.-Lo
13	918199	1	LOCKWASHER, 7/16
14	918213	1	NUT, hex, full 7/16-14
15	171364	1	FORK, Shift, Hi-Lo
16	154262	1	BALL
17	171456	1	SPRING
18	930614	1	CAPSCREW, hex, 5/16"-18 x 5/16"
19	175270	1	SHAFT, Pulley
20	156084	1	SEAL, Oil
21	156085	2	WASHER
22	8061048	2	RING, Retaining
23	170453	1	KEY
24	156087	1	PINION ASSY., Hi-Lo
25	156084	1	SEAL, Oil
26	156089	2	WASHER
27	165009	1	SHAFT & GEAR ASSY. (incl. ref. nos. 28-29-30)
28	165010	1	SHAFT, Brake
29	165011	1	GEAR CLUSTER ASSY.
30	156292	1	PIN, Dowel
31	1652445	1	AXLE HOUSING ASSY. (incl. ref. no. 32)

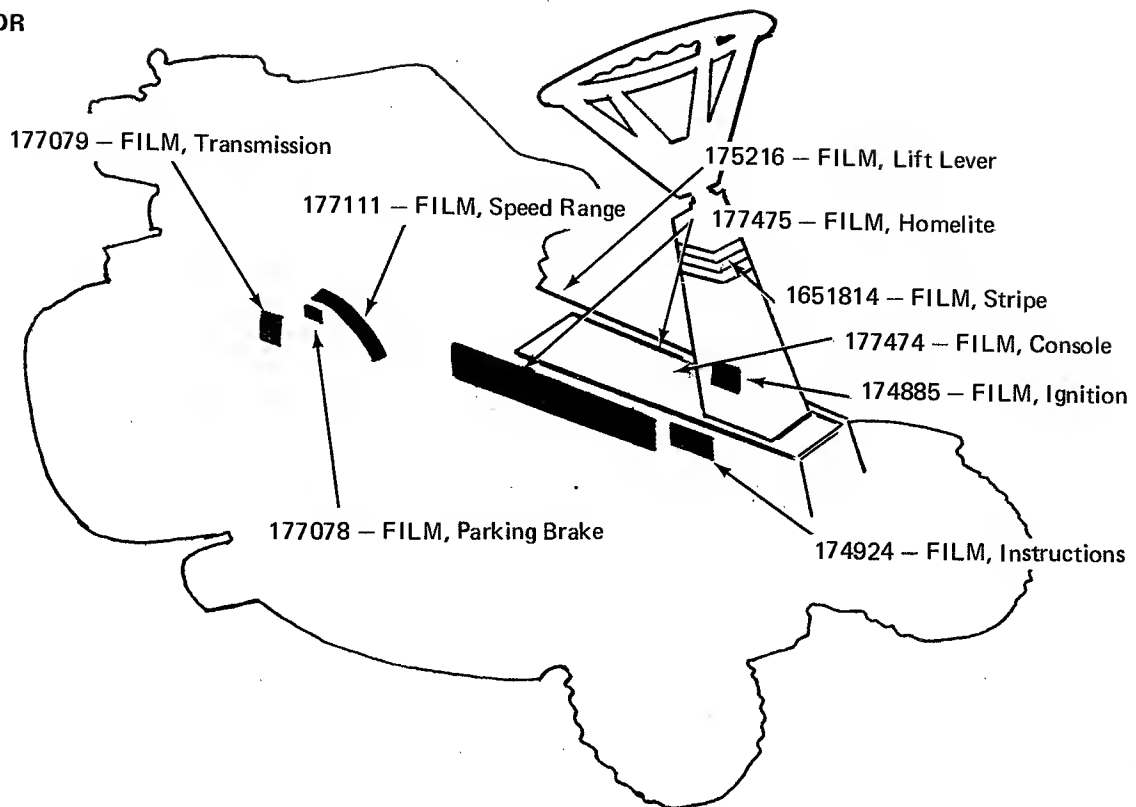
Ref. No.	Part No.	Qty.	Description
32	163021	2	BUSHING
33	163012	1	SEAL, Oil
34	156099	1	SEAL, Oil
35	161130	1	CAPSCREW, Special
36	919357	2	CAPSCREW, Hex, 3/8"-16 x 7/8"
37	916965	2	LOCKWASHER, 3/8"
38	175312	1	R.H. AXLE ASSEMBLY
39	175311	2	WASHER
40	175314	1	L.H. AXLE ASSEMBLY
41	156002	1	PLATE, Differential
42	175328	1	DRIVE GEAR ASSY.
43	121083	4	SPINDLE
44	158579	4	PINION
45	121084	2	SPACER
46	162085	2	SPRING
47	921972	4	CAPSCREW, Hex, 3/8"-16 x 2-1/2"
48	923428	4	LOCKNUT, 3/8-16
49	1652526	1	GEAR COVER ASSY. (incl. ref. nos. 50 through 53)
50	1650305	1	COVER
51	157679	2	BEARING, Roller
52	163074	1	PLUG, Expansion
53	163022	2	BUSHING
54	163012	1	SEAL, Oil
55	156103	1	GASKET
56	907729	10	CAPSCREW, Hex, 5/16"-18 x 1-1/4"
57	917356	10	LOCKWASHER, 5/16"
58	930669	1	KEY, 5/32" x 5/8"
59	172038	1	KNOB
60	1651242	1	PLATE, Guide
61	927428	2	SCREW, Thread-Forming, 1/4-20 x 3/8
62	178051	1	DEFLECTOR, Oil

CLUTCH & BRAKE

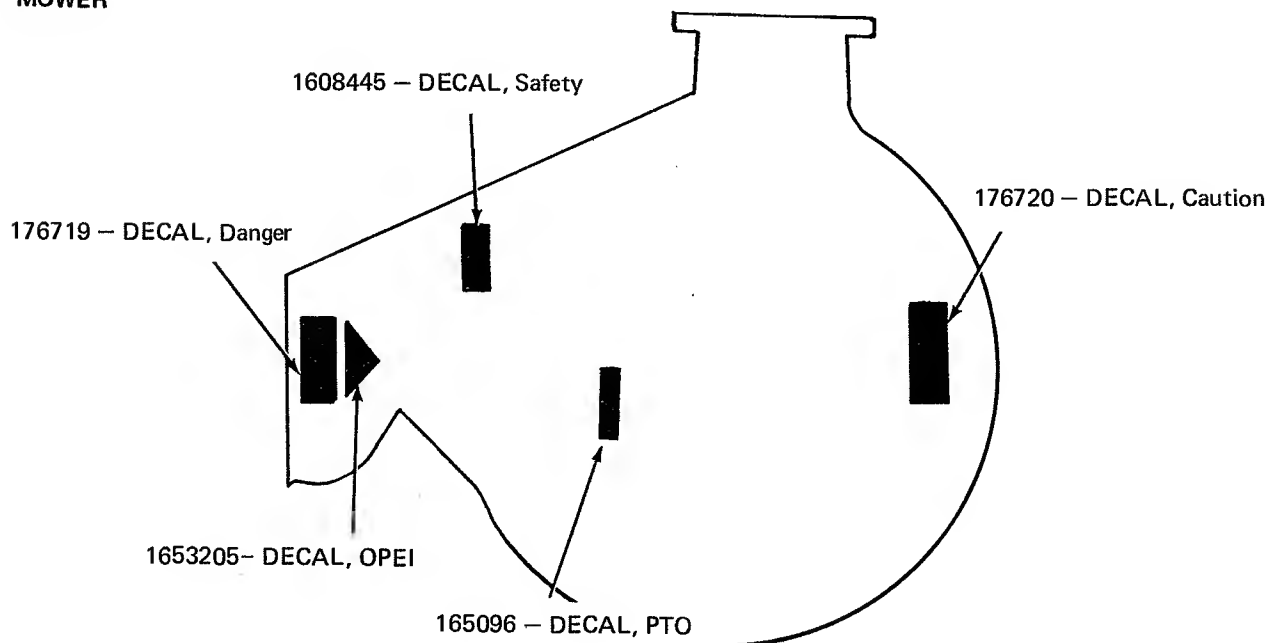


FILMS AND DECALS

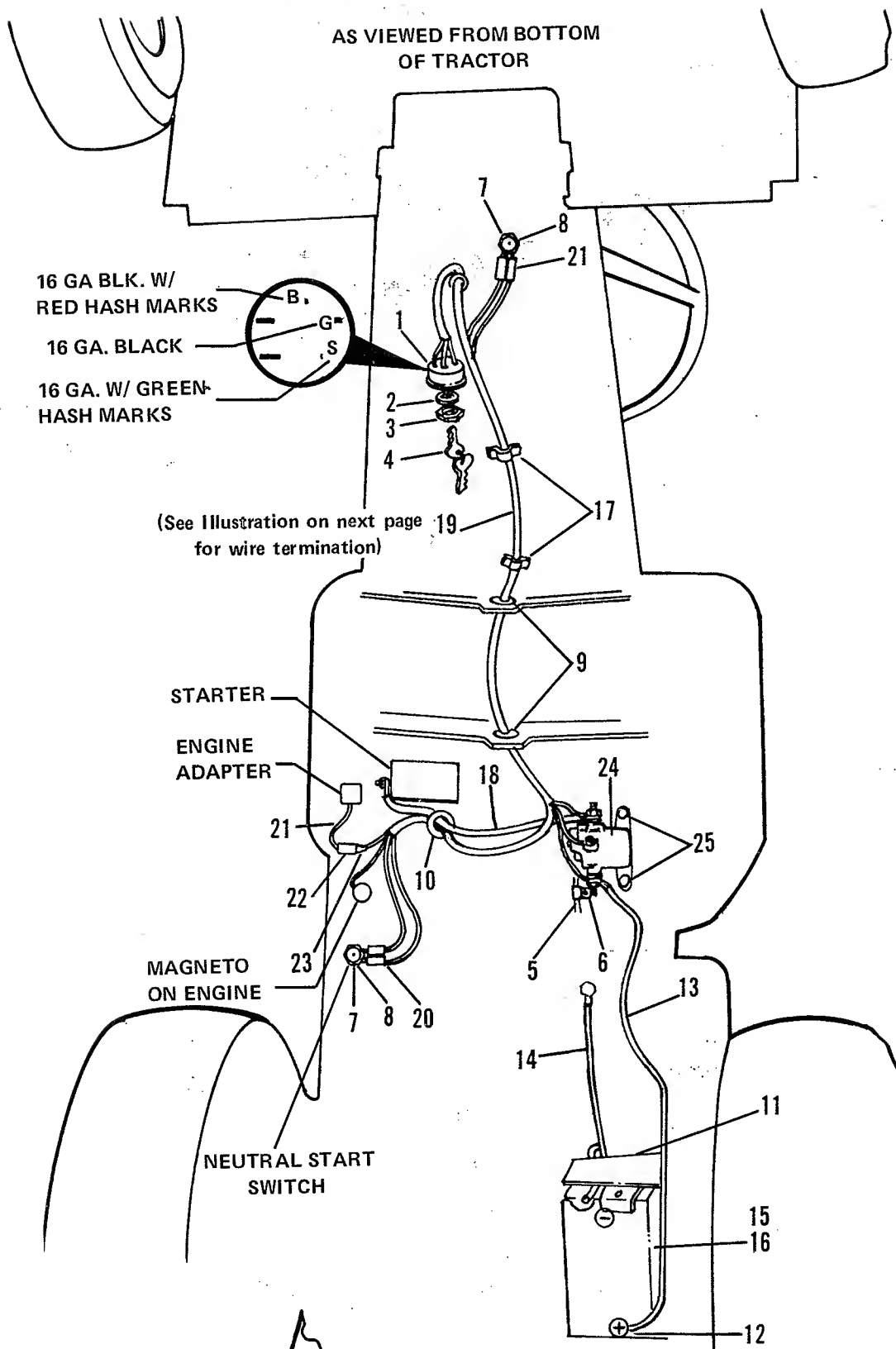
TRACTOR



MOWER



ELECTRICAL STARTER

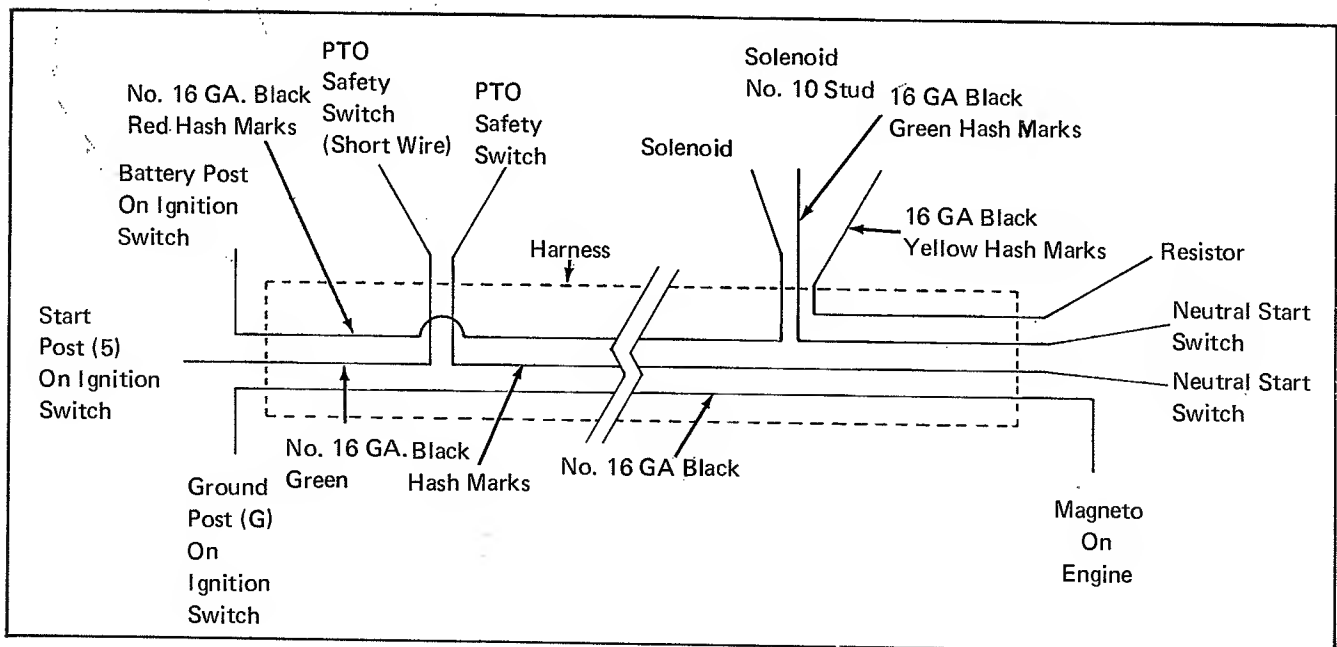


ELECTRICAL STARTER

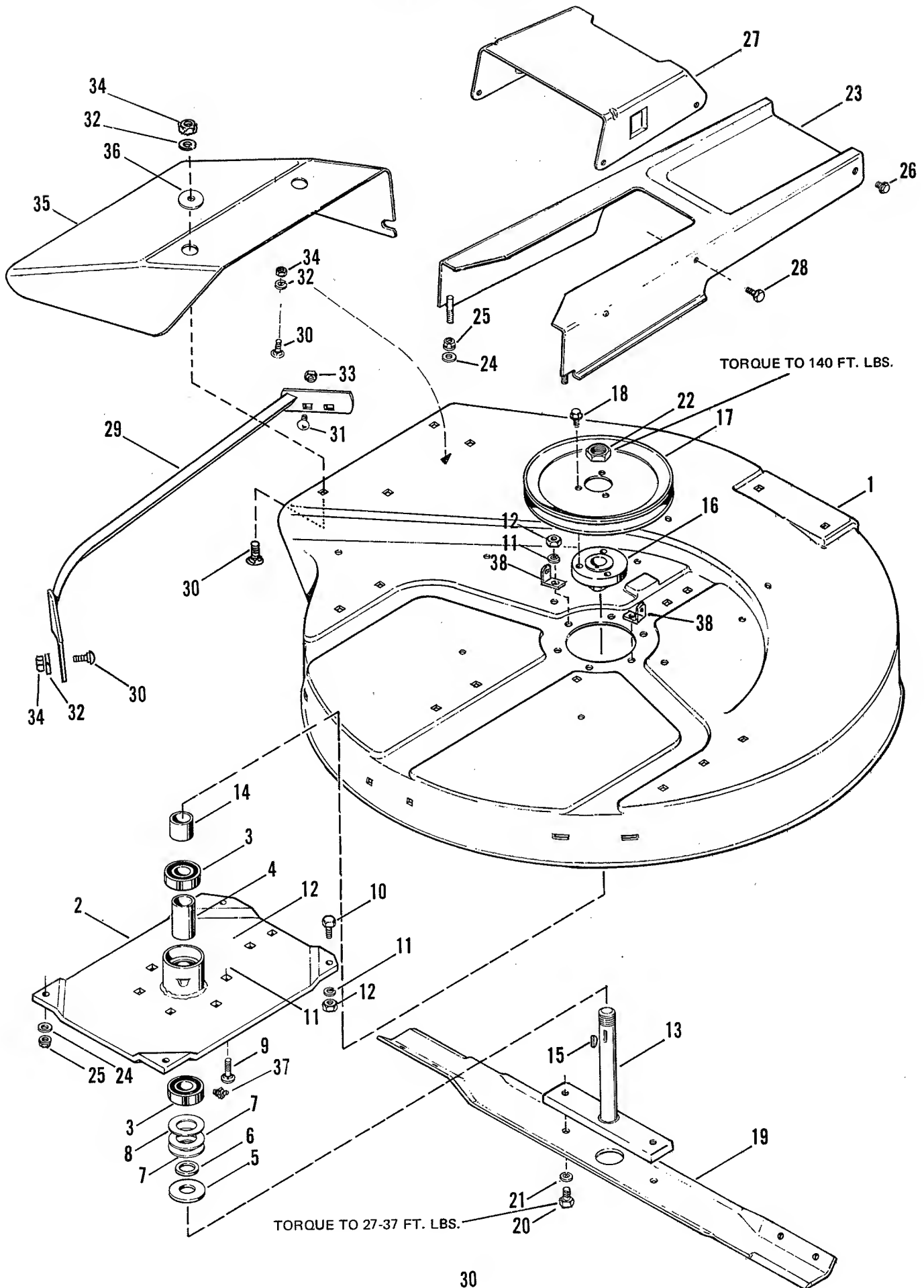
Ref. No.	Part No.	Qty.	Description
1	178280	1	SWITCH, Ignition
2	918906	1	LOCKWASHER, int., 5/8
3	122234	1	NUT, Special
4	122203	1	KEY & RING ASSY.
5	154247	1	CLAMP, Throttle cable
6	929000	1	SCREW, Thread forming
7	177522	2	SWITCH, Safety
8	930647	3	NUT, Pal, 9/16-18
9	176833	2	GROMMET
10	1650793	1	GROMMET
11	1652311	1	SUPPORT ASSEMBLY, Battery
12	172744	1	STRAP, Rubber
13	177981	1	CABLE ASSEMBLY, battery to solenoid

Ref. No.	Part No.	Qty.	Description
14	176975	1	CABLE ASSEMBLY, neg. battery to ground
15	177390	1	BATTERY & CLIP ASSY.
16	174648	1	BATTERY
17	176912	2	CLIP, Wire
18	177982	1	CABLE ASSEMBLY, solenoid to starter
19	1650862	1	WIRING HARNESS
20	1651222	2	CONNECTOR, Body
21	178172	1	WIRE ASSEMBLY
22	178171	1	RESISTOR
23	930612	2	SCREW, Thread-forming
24	122216	1	SOLENOID
25	929000	2	SCREW, Thread-forming

WIRING HARNESS DIAGRAM



MOWER HOUSING



30" ROTARY MOWER HOUSING

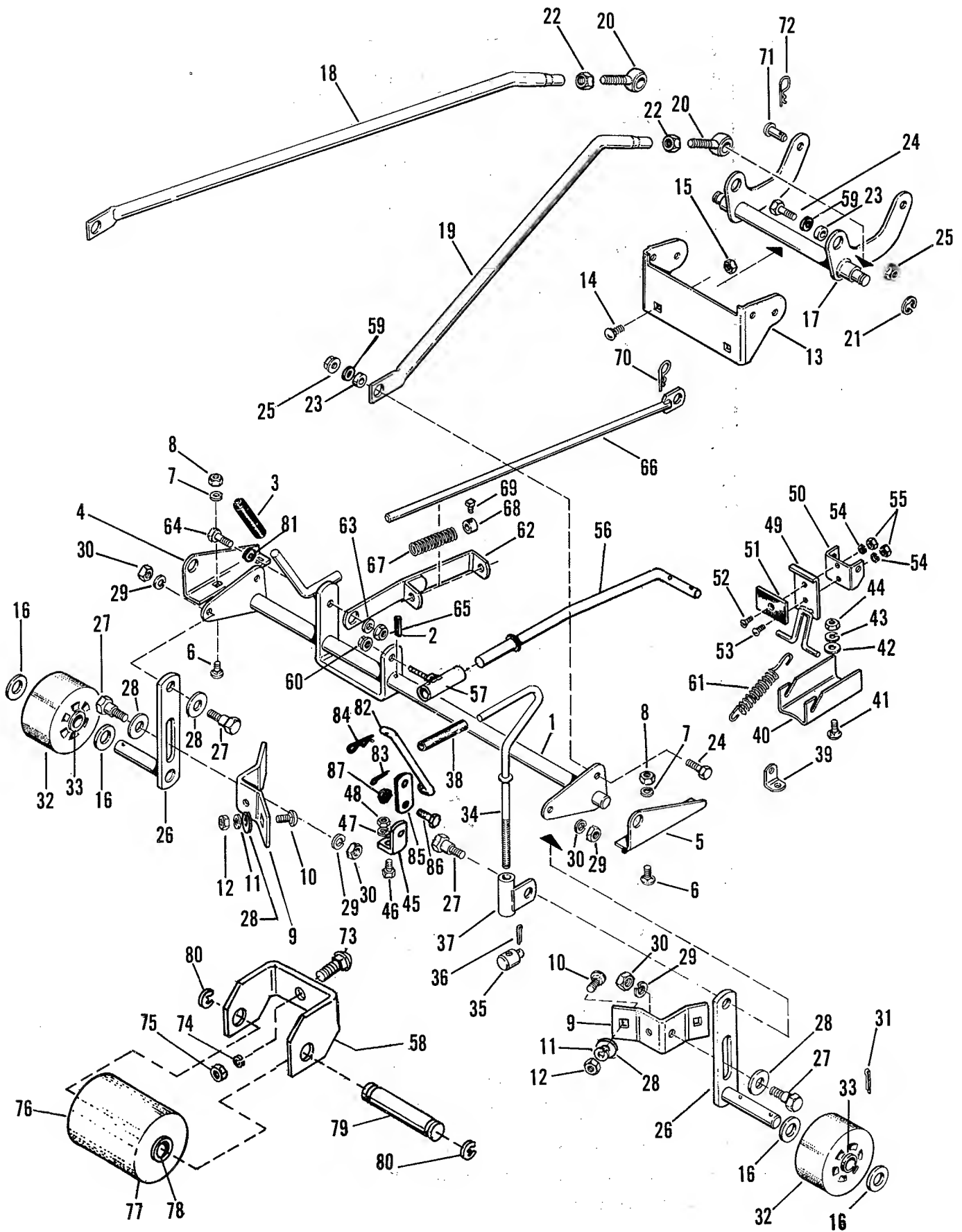
Ref. No.	Part No.	Qty.	Description
1	1608351	1	30" HOUSING, Mower
2	1651298	1	ARBOR TUBE ASSY.
3	108202	2	BEARINGS, Ball
4	176984	1	SPACER
5	108182	1	WASHER, Arbor
6	108181	1	WASHER
7	108472	2	WASHER
8	108257	1	WASHER
9	921158	6	BOLT, Carriage, 5/16-18 x 1"
10	921333	2	CAPSCREW, Hex, 5/16"-18 x 1"
11	917356	8	LOCKWASHER, 5/16"
12	917372	8	NUT, full hex, 5/16-18
13	1651293	1	ARBOR ASSEMBLY
14	1651295	1	SPACER
15	918312	1	KEY, Woodruff, 3/16 x 5/8
16	1651404	1	HUB, Pulley
17	1653600	1	PULLEY
18	177932	3	SCREW, Thread forming, 3/8"-16 x 3/4"
19	1651297	1	30" BLADE
20	922262	2	CAPSCREW, Hex, 3/8"-16 x 7/8"
21	916965	2	LOCKWASHER, 3/8"
22	922133	1	NUT, hex, jam, 3/4-16
23	1611652	1	LOWER COVER ASSY.
24	917642	4	WASHER, Plain, 5/16
25	929001	4	NUT, Flange, 5/16
26	928730	2	CAPSCREW, Hex, 3/8"-16 x 1/2"
27	1611653	1	COVER, Upper
28	927428	2	SCREW, Taptite 1/4-20 x 3/8
29	1653132	1	STONE GUARD ASSY.
30	920562	4	BOLT, Carriage, 5/16-18 x 3/4"
31	923700	2	BOLT, Carriage, 5/16-18 x 1/2"
32	917356	5	LOCKWASHER, 5/16
33	928698	2	LOCKNUT, jam, 5/16-18
34	917372	5	NUT, full hex, 5/16-16
35	1611647	1	DEFLECTOR
36	8161199	2	WASHER, Special
37	921133	1	FITTING, Grease
38	1602446	2	CLIP, Spring Anchor

Arbor to housing assembly 1653131 consists of ref. nos. 1,9,10,11,12,38 and arbor sub-assy. 1651034.

Arbor sub-assy. 1651034 consists of ref. nos. 5,6,7,8,10,13,14,15,22, and bearing and tube assy. 1651036.

Bearing and tube assy. 1651036 consists of ref. nos. 2,3, and 4.

MOWER CONTROL

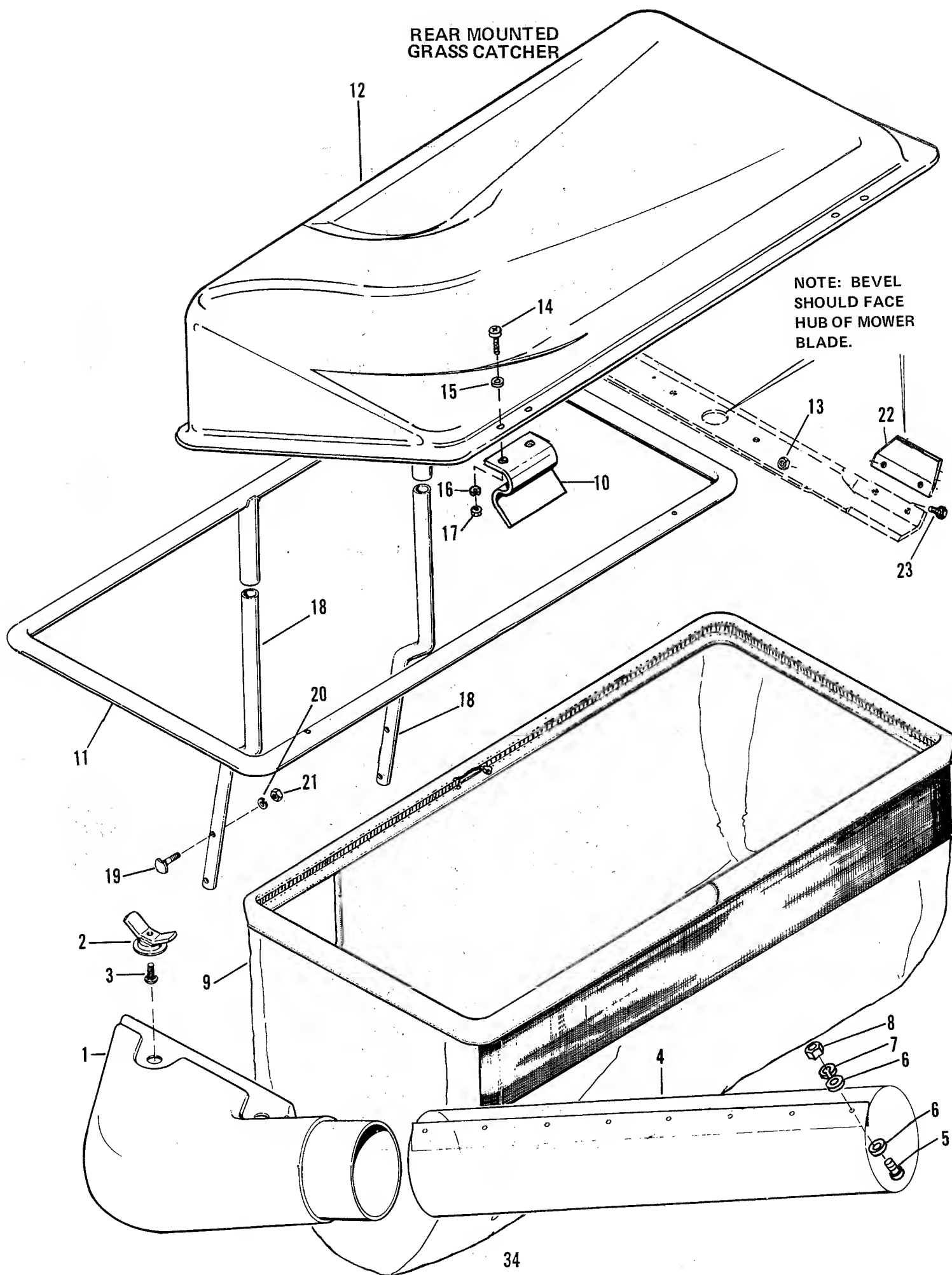


MOWER CONTROL

Ref. No.	Part No.	Qty.	Description
1	1653143	1	CONTROL ARM ASSY.
2	918111	2	PIN, Roll, 1/8 x 1
3	161105	1	GRIP, Handle
4	1611091	1	BRACKET, L.H. Pivot
5	161100	1	BRACKET, R.H. Pivot
6	930685	4	BOLT, Carriage, 5/16-18 x 5/8 lg.
7	917356	4	LOCKWASHER, 5/16
8	917372	4	NUT, full hex, 5/16-18
9	1611118	2	BRACKET, Rollersupport
10	930685	4	BOLT, Carriage,
11	917356	4	LOCKWASHER, 5/16
12	917372	4	NUT, full hex, 5/16-18
13	1611650	1	BRACKET, Fr. Mower
14	930591	2	SCREW, Whiz lock, 5/16-18 x 3/4
15	927557	2	NUT, flange, 5/16-18
16	177351	4	WASHER
17	1653133	1	ROCKER ARM ASSY.
18	1653162	1	ARM, L.H. Adjusting
19	1653163	1	ARM, R.H. adjusting
20	157215	2	EYEBOLT
21	158399	2	RING, Retaining
22	919262	2	NUT, hex jam, 1/2-20
23	153081	4	SPACER
24	921210	4	CAPSCREW, Hex, 3/8-16 x 1 lg.
25	923428	4	LOCKNUT, 3/8-16
26	1611121	2	ROLLER SUPP. ASSY.
27	1602186	4	BOLT, Shoulder
28	918430	6	WASHER, Plain, 7/16
29	916965	4	LOCKWASHER, 3/8
30	916950	4	NUT, full hex, 3/8-16
31	918458	4	PIN, cotter, 3/16 x 1
32	1603206	2	ROLLER ASSEMBLY, (incl. 2 of Ref. No. 33)
33	108419	4	BUSHING
34	176775	1	HANDLE
35	108172	1	PIVOT
36	918448	1	PIN, cotter, 3/32 x 1
37	1653599	1	ROD GUIDE ASSY.
38	176985	1	GRIP, Handle
39	1602446	2	ANCHOR, Spring
40	1653159	1	BRACKET, Pivot
41	921158	2	BOLT, Carriage,
42	917642	2	WASHER, Plain, 5/16
43	917356	2	LOCKWASHER, 5/16
44	917372	2	NUT, full hex, 5/16-18

Ref. No.	Part No.	Qty.	Description
45	1650140	1	BRACKET
46	919318	1	CAPSCREW, Hex, 5/16-18 x 5/8 lg.
47	917356	1	LOCKWASHER, 5/16
48	917372	1	NUT, full hex, 5/16-18
49	1653160	1	BRAKE SUPPORT ASSY.
50	1653161	1	ANCHOR, Brake Rod
51	1610590	1	SHEAVE, Brake
52	926267	1	SCREW, flat hd. mach. No. 10-24 x 5/8 lg.
53	916080	1	SCREW, Rd., Hd. Mach. No. 10-24 x 1/2 lg.
54	917365	2	LOCKWASHER, No. 10
55	916621	2	NUT, hex, No. 10-24
56	178547	1	ROD, Brake
57	178548	1	ROD GUIDE ASSY.
58	1611097	1	BRACKET, Ctr. Roller
59	917378	4	WASHER, Flat, 3/8
60	923428	1	LOCKNUT, 3/8-16
61	1602894	2	SPRING
62	176743	1	ROD GUIDE ASSY.
63	153081	1	SPACER
64	907731	1	CAPSCREW, Hex 3/8-16 x 1 lg.
65	923428	1	LOCKNUT, 3/8-16
66	176874	1	CLUTCH ROD ASSY.
67	162065	1	SPRING
68	105201	1	COLLAR, Set
69	928804	1	SCREW, Set, 1/4-20 x 3/8 lg.
70	8161045	1	CLIP, Hairpin
71	156306	2	PIN
72	106788	3	CLIP, Spring
73	930685	2	BOLT, Carriage, 5/16-18 x 5/8
74	917356	2	LOCKWASHER, 5/16
75	917372	2	NUT, Hex, 5/16-18
76	108431	1	ROLLER ASSEMBLY
77	108178	1	ROLLER
78	108419	1	BUSHING
79	1603205	1	SHAFT, Ctr. Roller
80	1602155	2	RING, "E"
81	917378	1	WASHER, Flat, 3/8
82	1650645	1	ROD
83	922000	1	PIN, cotter, 3/32 x 5/8
84	106787	1	CLIP, Hairpin
85	108199	1	LINK
86	917397	1	CAPSCREW, 5/16-18 x 3/4
87	923362	1	LOCKNUT, 5/16-18

REAR MOUNTED GRASS CATCHER



REAR MOUNTED GRASS CATCHER

Ref. No.	Part No.	Qty.	Description
1	176871	1	ADAPTER
2	123103	2	NUT, ASSEMBLY
3	920563	2	BOLT, Carriage, 5/16-18x1
4	177104	1	TUBE, Discharge
5	930531	8	SCREW, Phillips hd., 10-32 x 1/2
6	916955	16	WASHERS, Plain, 3/16
7	909055	8	LOCKWASHER, No. 10
8	917415	8	NUT, full hex, 10-32
9	177086	1	BAG, Grass
10	1653266	4	CLIPS
11	1653265	1	SUPPORT ASSEMBLY
12	177109	1	COVER
13	923362	4	LOCKNUT, full hex 5/16-18
14	930531	8	SCREW, Phillips head., 10-32 x 1/2
15	916955	8	WASHERS, Plain, 3/16
16	909055	8	LOCKWASHER, No. 10
17	917415	8	NUT, full hex, 10-32
18	177096	2	SUPPORT, Vertical
19	177249	4	BOLT, Curved head
20	917356	4	LOCKWASHER, 5/16
21	917372	4	NUT, full hex, 5/16-18
22	177243	2	PLATE, Lift
23	925205	4	CAPSCREW, Hex, 5/16-18 x 5/8

COUNTERWEIGHT

Ref. No.	Part No.	Qty.	Description
1	1653380	1	COUNTERWEIGHT ASSY.
2	923232	2	BOLT, Carriage, 3/8-16 x 1
3	916965	2	LOCKWASHER, 3/8
4	916950	2	NUT, Hex, 3/8-16

